

# CHEMICAL MARKETS

VOL. XXVI

JUNE, 1930

No. 6.

## Toxicity

MUCH has been done to correct many false notions which the general public has so long cherished about the chemical industry. The man on the street no longer considers chemicals and chemical processes chiefly as cheap and nasty substitutes. His wife has learned that a chemist is something more than a sort of super-drug-clerk. Even bankers have come to a comprehension of the new values created by the industry which they have long accused of being a destroyer of capital.

IN ONE rather important matter, however, the modern application of chemicals to industry enjoys a bad name. They are quite generally supposed to subject workers to unusual, serious, often mysterious health hazards.

PARTLY this is true. But there is certainly much exaggeration of these risks and a great deal of careless or selfish accusation. Chemical health hazards are a popular cause—in the demagogic sense—and it is dangerously easy to pass laws and regulations that are unnecessarily rigid. In like manner, many public health officials quite unconsciously, but in a violently partisan spirit, take sides with worker against the employer. It is not good that most workers in our rayon plants believe that they are doomed men. The painters' prejudice

against lacquer may be fundamentally economic, but he makes his plea on hygienic grounds. Suspicion of danger to health is a positive drag on the advance of chemicals and chemical processes in new industrial fields, yet such expansions are the sole relief for the period of declining commodity prices into which we are obviously entering.

ALL these are sufficient reason why the chemical industry owes it to itself to determine the facts. An exhaustive search of the literature and compilation of the known facts—pro and con—should be made. Careful complete physiological experiments should be undertaken by competent medical men and clinical evidence should be gathered. After an exhaustive, disinterested study of this kind the facts should be broadcasted, and an active educational campaign carried on.

SUCH research and propaganda would take time and cost money. It would be well worth both. This matter involves practically every branch of the industry and it should have industry-wide support. The recently organized Solvents Institute appears to be the logical leader, for these manufacturers have a large, immediate stake in the matter. Robert Baldwin is obviously a capable organizer for such an undertaking.

When Charles A. Lindbergh guided his monoplane, the "Spirit of St. Louis", to a safe landing at Le Bourget, Paris, May 21, 1927, a new era in American aviation dawned. For the first time the public was "air-minded". And this spanning of the Atlantic Ocean was practical proof that the airplane would increasingly influence the physical and mental stature of America.



## "See American First"

**WHAT** do you get for your Alcohol dollars when "American" Alcohol is specified?

Your product is assured of strictly high quality . . . the result of close technical control over manufacturing operations, plus an exclusive process of distillation, originated in our laboratory.

Your production schedules benefit, also. Prompt deliveries are assured by a system of distributive warehouses functioning from every important center. And the experienced "American" organization cooperates in helpful ways.

Your Alcohol dollars pay extra dividends when you "See American First."

*This is number 18 of a series depicting historical periods in the development of America*

### AMERICAN COMMERCIAL ALCOHOL CORPORATION

420 Lexington Avenue, New York, N. Y.

Plants:

Pekin, Ill.

Gretna, La.

Philadelphia, Pa.

San Jose, Cal.

#### Solvents and Plasticizers manufactured by the

KESSLER CHEMICAL CORPORATION

a subsidiary of

AMERICAN COMMERCIAL ALCOHOL  
CORPORATION

Ethyl Acetate

Butyl Acetate, Nor. and Sec.

Amyl Acetate Butyl Propionate

Amyl Propionate Butyl Butyrate

Ethyl Lactate

Butyl Alcohol, Sec.

Amyl Alcohol Refined Fusel Oil

Butyl Stearate Dimethyl Phthalate

Diethyl Phthalate

Diamyl Phthalate Dibutyl Phthalate

Dibutyl Tartrate Triacetine

Special Solvents and Plasticizers

Warehouse stocks carried

at all principal consum-  
ing points



## Executive Positions

There is food for thought in the article "Men and Mergers" by the Assistant Secretary of Commerce. Quite obviously the conditions, which he points out will cause many changes among the executives of any industry, exist to-day in many chemical fields. As a matter of fact we ourselves already have confirmation of this in three informal suggestions from men now holding important positions that they will be seeking next month a new post and we know of two good companies which are seeking men for major executive positions. Dr. Klein's suggestion is timely, but it is more than that.

There is no need to review the factors which effect executive personnel in the merger movement. They are obvious and they are frequently discussed. But they create a real problem which debate and speculation does not by any means solve. Some action along the lines indicated by Dr. Klein would save for the industry a preventable waste of brains and experience and for the individuals much uncertainty and distress.

## The President's Veto

The last friends of the Hawley-Smoot tariff bill have apparently fallen by the wayside. But despite the growing dissatisfaction which has been expressed throughout the country not only with the new rates but also with the administrative provisions of the bill, it is not likely that President Hoover will exercise his veto power in this case. It is generally understood that he does not like the proposed measure, but to veto it would be an admission of party weakness which is not considered advisable at this time. The agreement, as we go to press, on flexible provisions acceptable to the President, seems to assure the signing of the bill upon its passage.

The increasing criticism of the bill comes apparently from both industrial and agricultural interests throughout the country and may be taken as an indication of a growing concern regarding the international aspects of our tariff schedules. The extended discussion of the proposed tariff has apparently served at least to crystallize a new apprecia-

tion of this country's economic position as a creditor nation.

## Fall Sales

Business leaders generally agree with satisfaction that price-cutting as a modern sales method is apparently on the wane. Slowly but surely, after years of constant hammering upon the same subject, it has become apparent to all but the worst offenders, that there is no profit in selling below cost.

As Mr. Zinsser points out in his article on "Uniform Prices vs. Price-Cutting," it takes courage to refuse an order, and the old, erroneous impression, that if the volume is heavy enough there is bound to be a profit, dies hard. The fallacy of this premise should be evident, but that it is not is shown by the fact that some industries are still torn from within by foolish and unprofitable price-cutting.

Now is the time for the sales chemical executives to strengthen their price policies where they need bolstering. All indications point to highly competitive conditions in the Fall and it behooves these executives to get their prices in line now, so that they may be held in line during the contract season. To follow any other course is to flit dangerously with a disastrous sales period for 1931.

## We Apologize

Mistaken identity is the theme alike of some of the best comedies and the greatest tragedies. Personally it is always embarrassing, and we are chagrined at the careless error we made last month in confusing the American Oil and Supply Company with the National Oil and Supply Company. For us to attempt to exonerate the National firm of prohibition charges that were not preferred against them is dangerously like an attempt to paint the lily. To have associated Curtis Burnett with this company, in view of the ancient trade rivalry of the two concerns, was quite as ridiculous. Such a mistake naturally enough pleases nobody. We regret our carelessness, and extend our sincere apologies.

## Quotation Marks

The "chemical potential" of Great Britain is almost immeasurably stronger than before the war. For example, the number of people chemically employed is vastly greater; the number of experts available has been at least quadrupled; chemical operations which before the war were unknown in this country are now in active commercial operation. Of the last, the synthetic nitrogen industry is the most conspicuous example; the dyestuffs industry comes next, and fine chemicals may also be included. Inevitably our resources for the manufacture of explosives—to say nothing of toxic gases—have greatly increased. It is estimated that during the war there were manufactured in Great Britain 68,500 tons of picric acid, 23,800 tons of T.N.T., 378,000 tons of ammonium nitrate, and 139,000 tons of cordite, making a total of 1,440,000 tons. Major Freeth's estimate is that to-day—if any such tragic necessity arose—two million tons freight at the very least would be saved on fixed nitrogen alone. It is at least a tribute to the pace at which chemical science and practice have advanced in the last decade and a half.—*Chemical Age*.

Vocational training will bring forth perhaps a new type of executive, trained in a manner not always associated with the requirements of business management. He will have to reckon with the constant changes in industry that scientific research is bringing. He will have to be able to approximate the value of technical development, to understand the value of scientific research. He will be equipped with an even and exact knowledge of the relationships between his business and similar businesses in the same field; between his industry and other industries which it may affect or by which it may be affected; between business and government, and even between business and politics, for no great industrial enterprise is safe from political attack.—*David Sarnoff*.

We are only at the beginning of an era of development in the chemical industries. It is a period which may bring prosperity or may bring ruin, for it will be highly competitive and changes will be startlingly rapid. Unless the course is laid with knowledge and foresight the thriving factory of to-day may be only a silent junk heap to-morrow. Fifteen years ago only a few of the largest and most progressive corporations maintained research organizations. To-day research is generally recognized as a necessity. A manufacturer who does not maintain an adequate research staff is in grave danger of being out-distanced and forced into an unfavorable position.—*Alfred H. White*.

Countries like the United States, protected by high duties against European competition and selling their chemical products inside of the States at high prices, threaten more and more in many export branches the European producers by dumping on the world market their over-production at low prices. There is only one logical consequence: European combines and cartels to keep up an export trade at reasonably profitable prices.—*Chemistry and Industry*.

Most of the lack of professional solidarity among chemists is traceable to the former lack of a well-defined status. To prove that a chemist is entitled to an economic status, he, and others, must know his economic value.—*The Chemist*.

It is not science that is to blame for any soul-deadening applications of the new knowledge it is constantly bringing to light; the blame must lie, on those who commercially exploit such knowledge in a spirit entirely alien to the original scientific quest after truth for its own sake.—*Chemical Age*.

I say with the highest authority, and I challenge any one to deny it, that we are threatened with the greatest financial crisis the world has ever seen.—*Sir George Paish*.

## Fifteen Years Ago

(From our issues of June 1915)

Gulf Refining Co. announced plans for construction of refinery in Texas to test a new process invented by A. M. McAfee for the extraction of high grade oils from petroleum by the use of aluminum chloride.

United States Steel Corp. announced plans to construct \$3,000,000 plant at Donora, Pa., for treatment of zinc and its by-products and for making sulfuric acid.

Chilean nitrate industry planned formation of holding organization embracing all producers and exporters.

E. H. Manahan was appointed manager of John C. Wiarda & Company.

Monmouth Chemical Co. was incorporated with capital stock of \$500,000.

Captain Herman A. Metz retired from the Fourteenth Regiment after ten years of service.

Monsanto Chemical Works appointed B. M. Covault as New York representative.

# Uniform Prices

vs.

# Price--Cutting

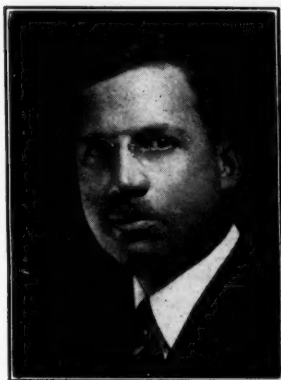
By Rudolph Zinsser

Secretary-Treasurer, William Zinsser & Co.

THE desire for volume at any price is the one factor which, more than any other, is responsible for the ills in our modern industrial system. This situation seems to be common to all business, whether chemical or any other kind. So few sales executives have the courage to refuse an order even when it actually means selling at a loss. The general impression seems to be that if the volume is heavy enough there is bound to be a profit.

Such distorted business thinking seems almost incredible in this modern age, when so much study has been given to the necessity for sound selling prices based upon a knowledge of costs. Yet in practically every line of business there are manufacturers who are selling either without adequate and complete cost data, or in complete disregard of it. If such manufacturers injured nobody but themselves, there would be no problem, for they would eliminate themselves. But, unfortunately, other manufacturers are forced to meet their prices, and ultimately the entire industry is working upon a profitless basis.

In the old days when a large company sold below cost in a restricted territory, or for a certain length of time, for the purpose of driving a particular competitor out of business, it was called unfair competition, and the law was invoked to force the cessation of such unfair practices. Many business men hope and believe that the time will come when selling below cost through ignorance of proper business methods will be considered unlawful. While at present such a principle may seem extreme, it is in direct keeping with the fundamental principle of modern business that no one shall use his property or his capital to inflict unnecessary injury upon others.



The reason for the existence of any business, the only excuse a man has to employ labor and capital, is to pay wages to employees and produce a profit for his stockholders. Profit never results from price wars carried on in the dark by people ignorant of or indifferent to their own costs. As long as we live under our present economic system the only industry and the only company which really serves the community is the one which is able to make and sell goods at a net profit.

Cut-throat, ignorant price wars are not to the benefit of the ultimate consumer. An uninformed buyer may reason that if two sellers compete with each other and cut prices until finally the product is selling below cost it is a good thing for him because he is able to get the product at a cheap price. He should know that the sale of goods below the cost of production is economically unsound and, in the final analysis, must be paid for by somebody.

But an approach to this problem from the consumer angle is impossible. The consumer cannot be expected to refuse to buy from the price cutter, even though he may realize that he would aid the general prosperity by doing so. It is the seller, manufacturer or dealer, who must see the dangers involved and move to protect himself from the price cutter.

Industry at the present time is without protection from the ignorant or deliberate price cutter, and the penalty which it pays for this lack of protection is depression and unprofitable price levels. Many of our important industries have been sunk and hopelessly depressed for years. The great necessity is to devise a suitable means of protection, without curbing, at the same time, the interplay of free competition,

and the incentive to progress, and without the liability to illegal combination, extortion and exploitation.

The difficulty of arriving at such a means of protection is obvious. While many manufacturers are above the illusion that they benefit by price-cutting, they can do little as individuals to combat the problem since even slight elevations in price result in a disastrous loss of business. Co-operation alone is adequate to cope with the situation, but co-operation is hard to secure. On one hand is definite legal restriction of price-cutting and on the other is the persistent illusion of profitable price-cutting and the natural distrust between competitors brought on by the keen competition arising out of this unsolved problem. In theory, the depressed price level problem is simple, easily understood and readily remedied. In practice it is a problem of great complexity, very hard to understand, and most difficult to cure.

### Progress Demands Control

Modern business cannot afford to accept the price-cutter as inevitable. The theory has been advanced that when the general industrial level is high, many newcomers enter every field of manufacture. Gradually over production becomes evident and a depressed period follows with its price wars and the gradual elimination of the weaker members. Modern industry should be able to find some more efficient method for the elimination of the price-cutter than by this outworn "survival-of-the-fittest" method. Economic progress depends upon some control or limitation of the depression curve in business and industry and, by co-operating to eliminate price-cutting, manufacturers may take a long step forward in that direction.

### Pyrites Production Increases

Pyrites production in 1929 amounted to 333,465 long tons, valued at \$1,250,141, compared with 312,815 tons, valued at \$1,081,758, in 1928, and 302,826 tons, valued at \$1,075,644 in 1927, according to the Department of Commerce. Quantity of pyrites sold or consumed by producing companies totaled 336,456 tons in 1929, 310,250 tons in 1928, and 293,764 tons in 1927. In 1929 the pyrites produced contained approximately 120,371 tons of sulfur, in 1928, 113,305 tons, and in 1927, 113,406 tons. Imports of pyrites in 1929 showed an increase of 13 per cent in quantity, following an increase of 82 per cent in 1928, and were 514,336 tons, valued at \$1,507,648 compared with 457,123 tons, valued at \$1,135,463, in 1928. The imports for 1929 are larger than in any year since 1917. Of the quantity imported in 1929 Spain furnished 446,093 tons and Canada 68,243 tons.

Dichloro-difluoro methane, a new refrigerant, promises to contribute greatly toward safety in automatic refrigeration. This compound is non-inflammable according to Department of Commerce, and practically non-toxic. In addition to the use of dichloro-difluoro methane in ordinary commercial and domestic refrigeration, this compound has possibility of wide use in cooling air for public buildings, perhaps in the near future for cooling the air of homes, and for cooling and conditioning the air of deep mines where earth temperatures prevent the deeper operations necessary to follow the ore vein.

## The Industry's Bookshelf

**Bearing Metals and Bearings**, by W. M. Corse, \$7.00, 383 pages, published by The Chemical Catalog Co., Inc., New York.

No. 53 of the monograph series. This is a very extended bibliography of the subject supplemented by full abstracts of many articles.

**Hand-to-Mouth Buying**, by Leverett S. Lyon, 487 pages, \$4.00, published by The Brookings Institution, Washington, D. C.

An examination of the proportion of business and the effects and concomitants of hand-to-mouth buying.

**German Commerce Yearbook 1929**, by Dr. Hellmut Kuhnert, 240 pages, \$5.00, published by B. Westermann Co., Inc., New York.

Germany's economic situation during 1928 and 1929 surveyed in statistics and in text.

**Science and the New Civilization**, by Robert A. Millikan, \$2.00, 194 pages, published by Charles Scribner's Sons, N. Y.

One of the great American physicists, and a Nobel prize winner, tells of the place of science in present day civilization in a series of lectures.

**No. 1 Retail Trade Mortality**, by Edmund D. McGarry, 67 pages, \$1.25, published by Bureau of Business and Social Research University of Buffalo, Buffalo, N. Y.

Statistics of failures in four retail groupings—grocery stores, independent drug stores, hardware stores, and drug stores.

**German Chemical Developments in 1929**, United States Department of Commerce Bureau of Foreign and Domestic Commerce, Trade Information Bulletin No. 690, 32 pages.

A report of the German chemical industry's progress at home and abroad.

**A Text Book of Pharmacognosy**, by Heber W. Youngken, third edition, 817 pages, \$6.00, published by P. Blackiston's Son & Co., Inc., Philadelphia.

A new edition revised and enlarged, with 367 illustrations, brought up-to-date with recent developments in pharmacognosy.

**An Audit of America**, by Edward Eyre Hunt, 203 pages, \$2.00, McGraw-Hill Book Co., New York.

A summary of the findings contained in the report on "Recent Economic Changes in the United States."

**The Advertising Handbook**, by S. Roland Hall, 1,048 pages, McGraw-Hill Book Co., New York.

The second edition brings up to date the principals and practices of advertising.

**Pensions in Modern Industry**, by Arthur David Cloud, \$10.00, 503 pages, published by Hawkins & Loomis Co., Chicago.

The legal, actuarial and economic principles of the problem of the aged employee.

**Outlines of Economics**, by Richard T. Ely, 868 pages, \$3.00, published by The MacMillan Co., N. Y.

A new and revised edition of a recognized authority on economics, brought up to date and partly rewritten.

# X-RAYS

By George L. Clark

*Professor Chemistry, University of Illinois*

## *Show the Way to Better Products*

ONLY a very few years ago any discussion of x-ray was limited to academic laboratories of physics, where the interest was in deducing atomic structure models from wave-length measurements, and to hospitals where modern medical diagnosis found its most powerful aid. But now a visitor to numerous large industries manufacturing commodities of every description may be conducted proudly to a laboratory devoted to x-ray research and testing. He may hear difficult problems discussed intelligently in terms of "diffraction patterns," "random or preferred orientation," "strain asterism," and the like.

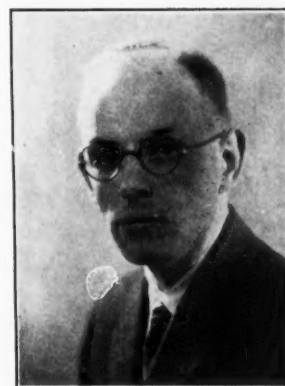
Here is but another evidence of the advance of a fundamental pure science to the aid of the practical manufacturer.

The great keynote of any such science is to relegate empiricism and guesswork into the realm of the past. The achievement of x-ray science lies in the rational improvement of processes and materials and the solution of problems unapproachable by other methods, simply by supplying the facts in a genuinely ultimate sense. It is the purpose of this brief paper to present some examples chosen at random of actual practical results, without attempting to explain in detail the x-ray technic or methods of interpretation. These may be found in more extended treatises<sup>1</sup>. The paper is being written quite appropriately on the 35th anniversary of the discovery of x-rays by Roentgen.

Since x-rays are like ordinary visible light except that they have wave-lengths perhaps 1/10,000 as long, it follows that they should be reflected, refracted, diffracted, polarized, etc. It also follows that they should penetrate matter opaque to visible or ultra-violet light, and that they should be associated with a far finer subdivision of matter than is apparent by

**Industry has a new and potent tool for analysis and research that has been put to a score of new uses.**

**This summary of these practical applications, suggestive of other uses in chemical processes, is timed on this the thirty-fifth anniversary of Roentgen's great discovery.**



optical observation. Upon the first of these fundamental differentiations depends the whole science of radiography of which the most familiar application is the observation of broken bones, bad teeth, etc. Here the x-ray beam is differentially absorbed by the matter in the path depending upon relative absorbing powers or densities. Thus on the photographic film or on the fluorescent screen will be observed a shadowgraph of the object in which bones or foreign objects on the interior of the body stand out in bold relief by contrast with the more easily penetrated surrounding soft tissues. What this application to medical diagnosis has meant to the welfare of mankind is beyond estimation.

Obviously any object whatsoever might be similarly tested as to interior gross structure and inhomogeneities, with the great advantage that the specimen need not be cut up or harmed in any way. The technic and the entire apparatus can be exactly the same as that employed in medical diagnosis. The following radiographic applications are actually made in American industries:

Castings of every description for internal cracks, blowholes, cavities, inclusions and segregations. Foundry technic in many instances has been scientifically revolutionized in order to eliminate defects. Routine radiographic testing is now generally employed for every piece, particularly where subsequent expensive machining is involved.

(1) Clark, "Applied X-Rays," McGraw-Hill, New York, 1927; "X-Ray Metallography in 1929", Metals and Alloys, 1, July, August, September, October, November (1929).

Welds for pipe cavities and imperfect bonding. Here again with the aid of this method of testing welding technic has been vastly improved. In certain cases such as for welded oil well drill rod assurance of soundness was previously impossible and the sale actually prevented.

Automotive and aircraft parts such as pistons, cylinders, propellers, for imperfections where failure would endanger life. In such cases radiographic testing is absolutely essential and manufacturers who do not employ it are subjecting users to needless risk and the products should be considered inferior.

Ball bearings for internal imperfections. Unwittingly a large manufacturer was turning out a large percentage of imperfect ball bearings until the surprising results of a radiographic test led to improvements in the process to a practically 100 per cent perfect product.

### Testing for Imperfections

Rubber tires for imperfect bonding to cords and reclaimed rubber for metallic foreign bodies.

Golf balls for imperfect centering of core.

Radio tubes for imperfect centering and position of electrodes.

Complicated glass, hard rubber and bakelite pieces of various kinds with internal seals, etc., for improper fabrication.

Wood for cracks, wormholes, rot, knots, embedded nails, etc., as employed in aircraft frames, special lumber, telephone poles, etc.

Railway ties for compression under tie plates.

Shells and cartridges for improper filling, imperfect timing adjustment, etc.

Metal capillaries for non-uniform bore and clogging.

Insulated wire for breaks, and porcelain insulators for imperfections.

Coal for presence of slate and efficiency of "jigging" process.

From the field of art the examination of old paintings and art objects for alterations, and retouching; excellent radiographic laboratories are now to be found in the Field Museum Metropolitan Museum, Fogg Art Museum, Harvard University and elsewhere.

Thus the ability to see on the inside of any object without altering or destroying the specimen is an obvious great boon to industry just as it has been to medical diagnosis.

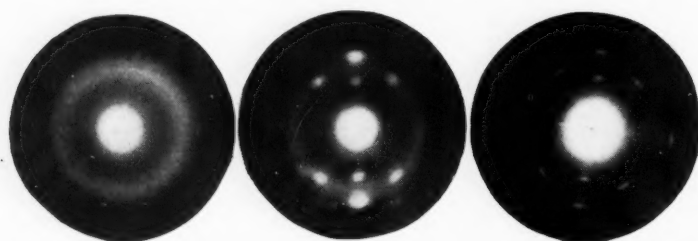
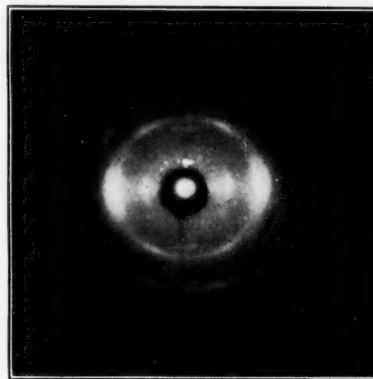
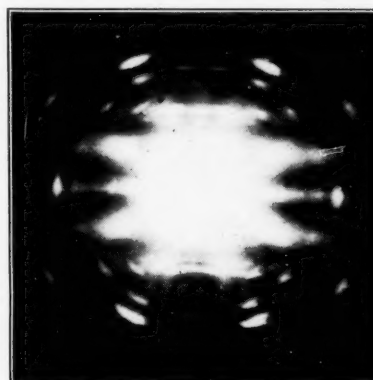
But x-ray science does not stop with radiography. The foregoing applications are logical manifestations of the property of penetration of objects opaque to ordinary light. The other fundamental prediction

from the nature of x-rays is that they should be associated with a far finer subdivision of matter than is ordinarily apparent. A series of finely ruled parallel lines on glass will diffract white light with the appearance of a spectrum of colors. Gratings with very much closer spacings than can be mechanically produced would be necessary for x-ray diffraction under ordinary experimental conditions, if these rays are like light except in wave-length.

### To Determine Crystal Structure

It took over fifteen years to discover that all solid crystals are perfect three dimensional gratings for x-rays by virtue of the fact that they are built in remarkably organized fashion with the atoms lying on equidistant parallel planes whose spacings are of the same magnitude as x-ray wave-lengths. Since every crystal has a very characteristic ultimate architectural plan depending on the kind and number of atoms, the diffraction pattern registered on a photographic film when a fine beam of x-ray passes through a specimen, will be characteristic of the particular material. Thus if the wave-length of the x-ray is known, as is usually the case, then the actual structure of a crystal acting as a grating may be deduced. Since the information involves the position in space of atoms to form a solid, we are thus employing x-rays to "look" down into the fine structure of matter far beyond the powers of any microscope.

X-ray diffraction science is, therefore, at the same time *sub-microscopic* and *super-microscopic*. By crystals is meant not only large single specimens with perfect geometric faces as in calcite, sugar, salt or diamond, but also practically all solid materials. Exam-

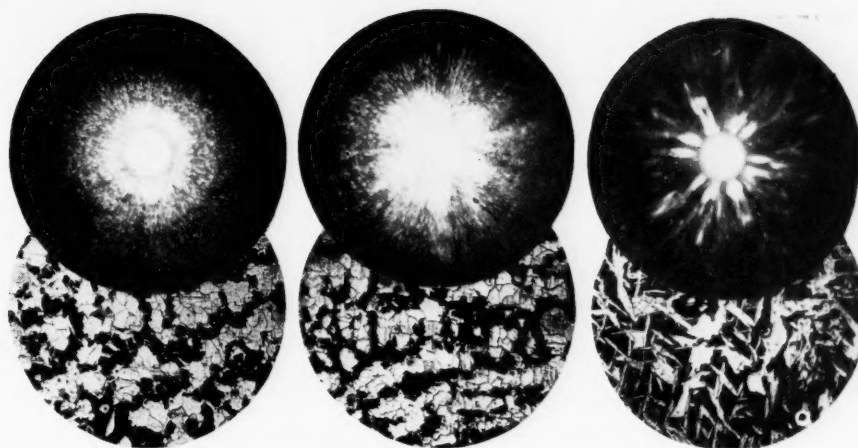


Above — Typical pinhole pattern for nearly ideal fiber (asbestos) showing both hyperbolas and circles

Below — Typical pattern for cellulose, showing crystal fiber structure (rayon of improved variety)

Left — Patterns for rubber: left to right, unstretched, stretched unvulcanized, stretched vulcanized

*Cast steel structures: (left to right)  
ideal anneal, commercial anneal,  
as cast*



ples of solid substances where there is no rational orderly arrangement of atoms on planes are extremely rare.

It is possible to analyze not only single grains but also extremely fine-grained aggregates. Even liquids which are usually classed as truly amorphous produce diffraction interferences indicating some kind of ordered arrangement of molecules even though this may be transitory. There is thus no limitation of the kinds of matter which may be examined in this super-microscopic sense, though of course the more distinctly crystalline the simpler the interpretations.

The x-ray chemist, therefore, employs a powerful, new, fundamental tool in the solution of some of his most difficult problems. For the diffraction pattern of his unknown specimen is, with interpretation based upon known physical laws, the symbol of a vast visual power reaching down to the atom. He discovers the smallest entity in space which has all the properties of the large visible crystal, which represents the solid building plan. For solid iron, for example, this is a cube less than three hundred millionths of a centimeter on a side with an atom of iron at each corner and one at the center. From the pattern he measures grain size in both the microscopic and sub-microscopic range. He detects internal strains which affect the parallel orderly grating structure. He identifies a given chemical element or compound with a given pattern and thus discovers impurities, chemical changes, and unsuspected reactions of all kinds.

#### Detection of Minute Changes

He discovers that fabrication such as rolling or drawing of metals profoundly influences the x-ray pattern. The metal is unchanged, so that he may quantitatively deduce the mechanism of reorientation in preferred directions of the crystal grains, and thus control the process as well as the heat treating and recrystallization which is essential to restore random arrangements of grains and the same properties in all directions. He discovers that cellulose, stretched rubber, silk, rayon, tendons and muscle fibers are crystalline and finds that nature has a common building plan for all such complex substances, namely, long spiral molecule chains arranged in bundles whose size

and arrangement as bricks in a chimney or as twigs in a brush-heap may be readily determined. He finds the patterns so sensitive that they specify the mine from which an asbestos sample has come, or the exact age of a growing cotton fibre, or the exact process by which a rayon thread has been manufactured.

He finds here a method of testing new ideas, of defining scientifically and exactly the conditions of manufacture which will assure uniform production of highest quality, and of demonstrating convincingly new patentable features of a process or product.

#### Industrial Applications

The following is a fragmentary list of examples of applications of the x-ray diffraction method to industrial problems. They are chosen to represent the wide scope.

Innumerable cases of structure, stability range, and predicted substitutes for alloys—brass, stainless steel, etc.

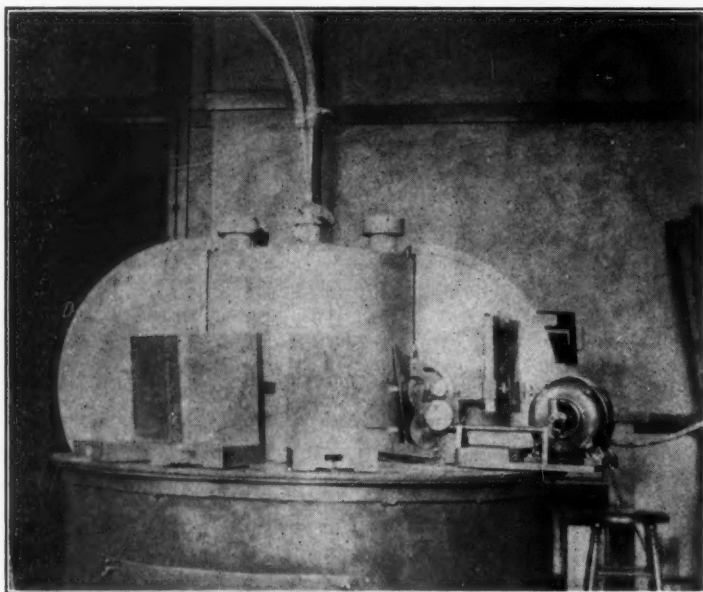
Numerous determinations of proper heat treatment of metals. In one case the x-ray results showed that at the correct temperature of annealing of cast steel parts (also determined from a series of patterns) a better structure was obtained in 30 minutes than in the six hours previously employed.

The prediction and complete verification that sheet metal rolled under combined compression and tension with small rolls so that the forces might be applied and balanced at the same place in the plastic metal, should be vastly superior in structure with fibering at a minimum as compared with the usual method of rolling with large driven rolls.

Discovery of the cause of failure of patent leather by incipient true crystallization of soaps formed with the drier, leading directly to revised manufacturing methods and vastly improved product.

An improvement in the transparency of waxed paper from 40 per cent that of air to over 80 per cent by a simple application of the diffraction results on influences affecting the crystallization of paraffin wax.

Numerous examples in catalysts for methyl alcohol production, electrodes, dentifrices, etc., of reactions and compounds formed which were deemed impossible at the temperatures or other conditions used.



*Top of multiple diffraction apparatus, showing water-cooling leads for Coolidge x-ray tube coaxial with cylinder, and quadrant, flat and oscillating cassettes in position*

A genuine improvement in the quality of rayon by fundamentally showing the structural effect of every step in the process and of adapting these to produce the necessary ultimate structure (or diffraction pattern) essential for proper tensile strength, extensibility, gloss, etc.

The first entirely scientific method of classifying cotton, silk and wool fibers, and a clear presentation of the essential facts of wood structure which would enable proper treatment, improved behaviour and wider applications.

#### **Better Control of Conditions**

A rational method of classifying forming steel and of predicting whether a given lot will form satisfactorily.

An exact method of control of heat treatment of electric silicon steel for minimum magnetic hysteresis loss and of actually classifying sheets as to magnetic behaviour purely from the diffraction pattern, as well as a routine method of exact analysis of the amount of final cold work given a sheet of metal after final annealing.

A method of specification for asbestos (single pattern) by comparison with standard patterns associated with practical behavior.

The demonstration that lubricating greases are crystalline and that proper orientation of long-chain molecules in layers is essential to lubrication, and the selection from x-ray crystal structure data of a dry white lubricant to replace graphite in lace curtain factories.

The selection and control of correct electro-deposition conditions for protective coatings by analyses of coating structures; determination of proper structure and methods for maximum reflecting power of plated head-light reflectors.

Determination of the mechanism of fire-proofing fibers by absorption of solutions, and of the exact amount required (any excess producing its own diffraction effects).

Control of addition of dyes and other agents to rubber, and of the primary effects of various treatments on colloidal size; the only method of ascertaining true reproduction of natural rubber in synthetic rubbers.

Structural changes in ceramic materials of all kinds with given heat treatment.

Control of burning of lime to assure freedom from carbonate and proper plasticity and of the dehydration of gypsum to plaster of paris leading to reuse of plaster molds.

Proof of the zonal texture of wire and a control of proper dies and drawing conditions.

Measurement of particle size in paint pigments, and control of production of carbon blacks.

Numerous cases of identification of essential substances extracted from natural products and foods and suggestions as to synthesis.

The only exact method of analysis of any material to prove whether or not it is true cellulose.

#### **For Measurement and Analysis**

Structural proof for agents suitable as accelerators for the setting of concrete and a method for test of incipient devitrification of glass.

Complete success in ascertaining difficulties in manufacture of soaps and method of specification for commercial oleic acid used as raw material.

A proof of satisfactory welding operations on cylinders without undue fibering by plastic stretching.

Measurement of film thickness of every kind.

Studies on constitution and structure of boiler scale as a function of various conditions.

Analysis and control of polymerization in synthetic resins and substitutes.

Analysis of fatty acids in cocoa butter.

Comprehensive differentiation of cellulose nitrates and acetates in plastic films employed in photography films, control of composition, and proof that only the triesters are true crystalline compounds.

Identification of chicle and control of synthetic and natural substitutes.

Analysis and method of selection of carbonado (black diamonds) employed as drills and analysis of cause of undue wear in spinning rings and control of case hardening operations.

Determination of causes of failure of galvanized coatings and a complete study of the structure of the entire transition zone between steel base and outer pure zinc, and control of thickness of new non-equilibrium phase in which failure occurs.

Fundamental studies of age-hardening in duralumin, ingot iron, etc., causes, changes and final effects.

The only rational method enabling study of effects of first very small traces of impurities on properties of

metals (for example, that 0.5 per cent iron in silver lowers the recrystallization temperature of the latter to room temperature and a trace of copper restores the value for the pure metal.)

Discovery of unsuspected cases of new preferred orientation of grains after recrystallization where random arrangement is desired, as in silver, copper and steel to explain peculiar behavior and failures, and grain size determination and specification in tungsten used for electric contact points.

Study of the nature and structure of adhesives and control of proper molecular orientation, and measurement of molecular sizes and changes in linseed and china wood oils and test for complete solution of driers.

Studies of chemical and physical changes of substances adsorbed on charcoal or silica gel (for example, mercuric chloride solution adsorbed on carbon gives the pattern of mercurous chloride).

Determination of proper conditions for manufacture of best quality of ice-cream, as to size and distribution of ice crystals.

Classification according to impurities and selection of proper manganese dioxide ores for use in electric batteries.

Analysis of minute traces of metallic impurities in paper and parchment.

Classification and identification of precious and semi-precious stones and routine method of differentiation between fine and cultivated (containing mother of pearl center) pearls.

## British Dyestuffs Industry Fills 90 Per Cent of Domestic Demand

British dyestuffs industry now produces 90 per cent of British textile dyestuffs requirements, according to report. Production of coal tar dyes in Britain last year attained 24,900 tons, passing 1928 production by more than 2,000 tons and 1924 output by over 10,000 tons.

Expansion of output has been general in all shades of vat dyestuffs, blacks increased from 67,687 pounds in 1924 to 157,297 pounds in 1929; browns from 8,915 pounds to 144,759 pounds; oranges from 32,051 pounds to 136,650 pounds; reds from 69,956 pounds to 307,597 pounds, etc. Colors which made up bulk of production last year were synthetic indigo, sulfur black, and alizarine red. In 1924 weight of these colors accounted for approximately 40 per cent of the total output that year, and proportion is also maintained in much higher output of 1929. Synthetic indigo accounts for 90 per cent of 5,790 tons of fast vat blues produced in 1929, as well as of 2,070 tons in 1924. The figures for all vat colors have increased from 2,234 tons in 1924 to 6,555 tons in 1929. Balance between synthetic indigo and total is accounted for by anthraquinoid coloring matters and indanthrene blue type and a small quantity of halogenated indigos.

Russian production of superphosphates from October, 1929, to March, 1930, amounted to 155,000 tons, as against 75,000 tons produced in the corresponding period a year before, an increase of 106 per cent.

Soviet Institute of Applied Chemistry research discovers new process for the production of metallic magnesium of a weight much lighter than aluminum.

## The Filter Press

One of the most severe casualties of the recent moving season was the loss of the works of the old grandfather's clock, proud possession of the Hooker company, between the sidewalk and the fifty-second floor of the Lincoln building, New York, where the company has established its new offices. Incidentally these offices bid fair to be the best appointed in the industry.

Lammot du Pont, president of the du Pont company; Jasper E. Crane, chairman of Du Pont Ammonia; and T. S. Grasselli, president of Grasselli Chemical; were among recent week-end guests at the Longgreen Valley, Maryland, home of C. Wilbur Miller, president of Davison Chemical and Silica Gel.

L. W. Rowell, president of the National Fertilizer Association, was "on the air," May 17, when he broadcasted a talk on "Feeding Future Millions," over the Columbia Broadcasting System network as part of a series of radio talks on "The Romance of American Industry."

The Congressional Country Club was the scene of one of the brighter spots of the Washington social season on the evening of May 12 when C. C. Concannon, chief of the Chemical Division of the Department of Commerce, entertained the staff of the Division at dinner.

T. W. Harris, Jr., purchasing agent, E. I. du Pont de Nemours & Co., Inc., will preside over the sessions discussing coal at the annual convention of National Association of Purchasing Agents, in Chicago, June 16 to 19.

The Old National Aniline building at 19-21 Burling Slip, New York, originally constructed by William J. Matheson, was recently sold for the fourth time in seven years and the fifth since its construction.

Sewell L. Avery, president of U. S. Gypsum and Robert F. Carr, president of Dearborn Chemical, are members of the board of directors of the Continental Illinois Bank & Trust Co., Chicago.

May 4-6 were busy days for Allan Brown of Bakelite: at French Lick he presided over the meetings of the industrial group of Associated National Advertisers, Inc.

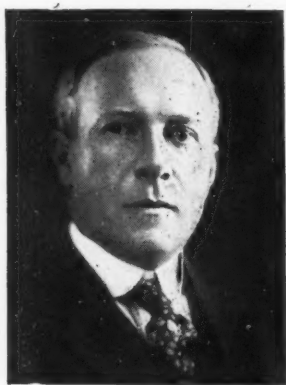
Curtis R. Burnett, president of American Oil & Supply, accompanied by his wife and daughter, is on a trip to the Coast.

## Montecatini Reports Growing Sale of Nitrogenous Fertilizers in Italy

Montecatini reports a marked decline in the company's production of copper sulfate to 42,871 metric tons for 1929, against 77,179 tons in 1928.

It further states that Italian "nitrogen consciousness" was strengthened, as marked by a considerable increase in consumption of nitrogenous fertilizers. The sale of ammonium sulfate in Italy totaled 122,660 metric tons, as compared with 107,500 in the preceding year, while that of ammonium nitrate and sulfo-nitrate were 21,650 tons, compared with 17,000 tons in 1928, and calcium nitrate 31,300 tons, against 12,300 tons.

The price of nitrogenous fertilizers was reduced approximately 10 per cent. Montecatini progress is noted from the installation of its synthetic nitrogen plants in Sweden, Japan, Germany, Poland and Belgium. One is now under construction in the Netherlands.



August Merz



S. W. Wilder

**I**N JUNE 1920 the Manufacturing Chemists' Association, as was its custom at that time, met behind closed doors at the India House, in New York City, in a strictly business session to discuss the problems confronting the industry. No golf, no social functions of any kind, for business, and business only, was the order of the day.

The American Dyes Institute, forerunner of the Synthetic Organic Chemical Manufacturers' Association, was a lusty infant holding its own meetings behind other closed doors. Its officers were: president, W. H. Cottingham, Sherwin-Williams Co.; secretary-treasurer, H. E. Danner; and counsel, Arthur J. Eddy. Members of the executive committee were: L. A. Ault, Ault & Wiborg Co.; Dr. J. Merritt Matthews, Grasselli Chemical Co.; Frank Hemingway, Frank Hemingway, Inc.; August Merz, Heller & Merz Co.; R. C. Jeffcott, Marden, Orth & Hastings Corp.; W. T. Miller, National Aniline & Chemical Co.; and M. R. Poucher, E. I. du Pont de Nemours & Co.

#### Now Hold Joint Meeting

In June of 1930, the Manufacturing Chemists' Association holds its annual meeting at the Seaview Golf Club, Absecon, N. J., from June 5 to June 7. The Synthetic Organic Chemical Manufacturers' Association is also holding its meeting at the same place and at the same time. Each organization holds its own meeting on the first day but after that the affair is a joint one. On the evening of the first day the two associations join in their second annual dinner and on the following day join in a common golf tournament. Business is strictly the rule for the first day, but after that golf, tennis, and indoor sports are provided for the entertainment of the members of both associations.

Dr. E. H. Killheffer, president, Newport Chemical Works, is toastmaster at the union dinner, and an outside speaker, Dr. E. B. Brossard, chairman, United States Tariff Commission, delivers the address of the evening. Jasper E. Crane, chairman of the board, Du Pont Ammonia Co., addresses the Manufacturing Chemists' meeting on "The Development of the

# Ten Years

*Then: the Manufacturing annual meeting welcomed  
ized American Dyes  
Now: the Synthetic Organic  
turers (the Dye Institute's  
jointly with the older*

Synthetic Ammonia Industry in the United States". Lamot du Pont, president, E. I. du Pont de Nemours & Co., presides at the meeting, and S. W. Wilder, chairman of the Board, Merrimac Chemical Co., is chairman of the executive committee. August Merz presides at the Synthetic Organic meeting.

#### Many Changes

Ten years have brought a good many changes in the industry but a glance at the page reproduced from our June 30, 1920 issue, shows that the industry was confronted with practically the same problems then as now. Henry Howard, then chairman of the Executive Committee of the Manufacturing Chemists' Association, in his annual report speaks of the work of the association in advocating legislation for the best interests of the industry. Then, as now, the tariff was an outstanding problem and in his report he tells of the division of labor with the American Dyes Institute on tariff matters relating to dyestuffs. This policy has been rigidly maintained by these two organizations up to the present time although to-day the cooperation between the Manufacturing Chemists and the Synthetic Organic group is much closer.



E. H. Killheffer

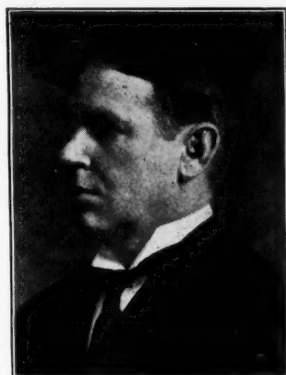


Jasper Crane

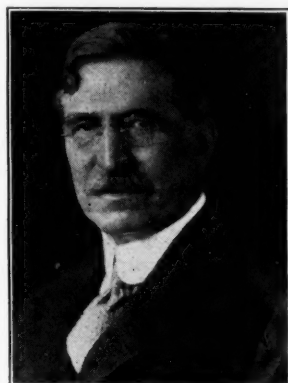
# Ago

*Chemists at their  
the recently organ-  
Institute.*

*Chemical Manufac-  
successor) meet  
organization.*



Henry Howard



Charles L. Reese

"The Manufacturing Chemists' Association went on record at the annual meeting at India House, Hanover Square, New York, last week, in favor of a tax on sales of merchandise, and approved the report of the Executive Committee which urged the substitution of a sales tax for the excess profits tax. Interest of the members centered around the report of the Executive Committee, which dealt with the work done in Washington to aid legislation in favor of the dye industry and revision of the tax laws, because of the bearing of these subjects upon many branches of the chemical industry. The sentiment of the meeting seemed to be that favorable tariff legislation will be passed later. The committee reported that representatives of the Manufacturing Chemists had testified at the dye hearings before Congress and

June 30, 1920]

DRUG & CHEMICAL MARKETS

1253

## Manufacturing Chemists Favor Dye Bill

*Association's Activities to Protect the Industry Reviewed  
in Annual Report of the Executive Committee*

By HENRY HOWARD, Chairman Executive Committee, Manufacturing Chemists Association\*

THE work of the Executive Committee of the Association this year has been chiefly in connection with matters arising out of the war and the termination of hostilities. The war and its termination have been the underlying cause of two matters, in which your Committee has devoted much time, the Chemical Foundation, Inc., and Dyestuffs legislation; Germany's position in the industry, especially in the dye industry previous to the war, and the necessity of now taking such steps as may be necessary to protect this development during the after-war period, are obvious to all. It has been necessary for your Committee to keep closely in touch with the above mentioned matters and with many other problems which have arisen. The work of the Committee has been greatly facilitated by the use of sub-committees and especially by the Washington office. Early in the year, the Executive Committee fixed the third Wednesday of each month as the day upon which its monthly meeting should be held. This has resulted in largely attending meetings of your Executive Committee so that various matters discussed and decided upon have had the consideration of practically the entire Committee in each instance.

### Chemical Foundation, Incorporated

We believe that it is unnecessary to explain in detail the purposes of the Chemical Foundation, Inc. It will be enough to say that the Foundation has purchased from the Alien Property Custodian more than four thousand German owned patents which were issued under the laws of the United States and expects to administer these patents and to give licenses under them to American concerns. Its underlying purpose is patriotism, that is, it desires to so administer the patents that the United States as a whole may secure the greatest advantage therefrom. Soon after the Foundation was organized, your Executive Committee felt that work of the Foundation would be greatly aided by co-operation on the part of chemical and other manufacturers. In accordance with instructions of the Committee the Chairman conferred with the officers of the Foundation and offered to them the service of your Executive Committee in securing co-operation in the work of the Foundation.

### Advisory Committee Chosen

Your Committee's recommendation was that co-operation could best be secured by the formation of an advisory Committee. Acting under this advice the Chemical Foundation called a meeting of its stockholders, organized them into sections according to industries, each section choosing its Committee, and this Committee choosing its chairman. The chairmen of the various section Committees form the advisory Committee, and now meet regularly once a month in the office of the Foundation. The most important matter, in the opinion of your Committee, has already been accomplished, namely the adoption by the Foundation of the principle that there will be no limitation as to who shall be given licenses under Patents, other than to make sure that the licensees are bona fide American interests, and that the patents will be worked

\*Report read at the annual meeting of the Association in New York.

CHEMICAL MARKETS' report of that meeting of ten years ago reads in part as follows:

a brief had been filed setting forth the Association's views. The bill imposing a duty of practically 100 per cent on imports of pyrites, which was killed, was also referred to, together with the Association's opposition to this measure. The work of the National Industrial Conference Board, especially relating to the campaign for revision of the tax laws was commended by the Executive Committee.

"Dr. Charles L. Reese, of E. I. du Pont de Nemours Co., was elected president of the association, succeeding T. S. Grasselli, of Cleveland. Other officers chosen were H. H. S. Handy, Semet-Solvay Co., vice-president; C. Wilbur Miller, Davison Chemical Co., vice-president; Lindsley Loring, vice-president Merrimac Chemical Co., treasurer, and Arthur H. Weed, Boston, secretary.

"The Executive Committee is composed of Henry Howard, Grasselli Chemical Co.; Lancaster Morgan, General Chemical Co.; H. H. Dow, Dow Chemical Co.; Adolph Rosengarten, Powers-Weightman-Rosengarten Co.; Mr. Miller and D. W. Jayne, the Barrett Co.

ly them in good faith and not taken out for stock jobbing purposes.

Your Committee, as well as the Advisory Committee, have felt that it was important to secure as wide a distribution of the stockholdings as possible. Both Committees have worked to this end and with considerable success, so that now the stock holdings are distributed among 160 American manufacturers, and an effort is being made to increase this, so that each stockholder will only hold a thousand dollars worth of stock.

### Legislation

Quite a large number of bills pertaining to the chemical industry have been introduced in Congress since the Armistice was signed. Your Washington office has kept closely in touch with these bills and from time to time has advised you of their status.

Dyestuffs Bill—We think that by far the most important bill introduced was the Longworth bill H. R. 8078 which contained provisions for licensing the importation of dyestuffs. The necessity of some means whereby the American dyestuffs industry could be protected from hostile competition was apparent and it seemed that the best and practically the only way to secure such protection was by requiring the licensing of importation of dyestuffs. Your Executive Committee took active part in urging the passage of this particular bill. Representatives of the Association appeared before the Senate Finance Committee and presented oral arguments in favor of the bill. In addition a brief was prepared by a sub-committee, under the direction of your Executive Committee and was submitted to the Senate Finance Committee. The bill is still pending and with earnest effort it should be possible to have it advanced to consideration in the Senate in the next session of Congress. It is the general belief that a majority of the Senate are not unfavorable to the bill.

As the Dye manufacturers have formed an organization of their own, called The American Dyes Institute, your Committee has felt that it was proper to allow them to take the lead in following the Dye legislation in Washington. Such work as we have done, therefore, has been in co-operation with the Institute, and only to such extent as the Institute has desired.

### Tariff on Pyrites: H. R. Bill 5215

This bill provided for a duty on the importation of Pyrites and other crude iron sulphide minerals of fifteen cents per unit of the sulphur content thereof, or a duty of more than 100 per cent. Your Committee felt that the enactment into law of this bill would be highly injurious to the chemical industry of this country. This bill was taken up with various parties in Washington and the injurious effect that it would have on the industry if it were passed was pointed out, with the result that it now seems certain that the bill will not be brought up for action. In accordance, however, with instructions from the Committee, a very complete brief setting forth the arguments against the bill was drawn up and although it has not been found necessary to use this brief, it is being held at the Washington office so that it can be used, if necessary.

Another bill considered by your Committee was one

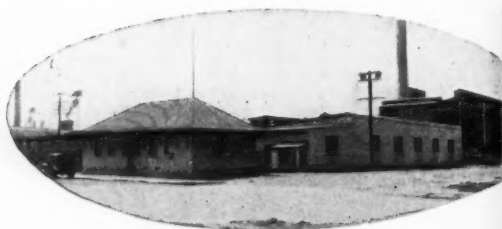
# From Brimstone Acid to a Full C



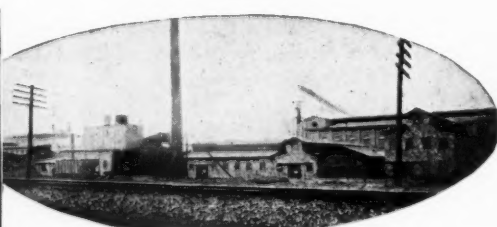
*J. A. Garde and the Waterbury plant of The Kalbfleisch Corporation which serves the New England territory*



*The Kalbfleisch plant at Chattanooga, Tenn.—one of the country's largest alum producers—with the manager, C. D. McCollister*



*The Elizabeth, N. J. plant which serves the New York metropolitan area, operated under the managership of H. A. Kast*



*R. A. Asbury in addition to running the Erie plant shown here has been recently put in charge of the new sodium sulfate mine and plant of the Arizona Chemical Co.*

IT HAS been wittily said that the first requisite for success in life is a wise selection of parents. No American chemical company has been more fortunate in this important choice than The Kalbfleisch Corporation.

Its founder had been thoroughly trained in chemistry at the Sorbonne in Paris, then the leading scientific school of Europe. His first American business experience was as manager of the chemical factory owned at that time by that substantial group of New York merchants and capitalists who founded the Chemical Bank. But, most important of all, to advanced technology and sound business principles Martin Kalbfleisch added the priceless ingredient of sterling character. Pages could not describe him as well as the nick-name he won when, during the chaotic political times of the Civil War, he served as Mayor of Brooklyn. He was known as "the honest Dutchman."

The chemical company he founded in 1829 was indelibly stamped with the impress of his forceful personality. Quality chemicals and fair dealing, backed by chemical research and commercial alertness to business opportunity, are the creed of the executives of The Kalbfleisch Corporation.

Martin Kalbfleisch's basic idea was that an exceptionally pure sulfuric acid was the best starting point for heavy chemical manufacture. Brimstone acid was his first product. It has always been a specialty of the company.

## Increasing Activities

During the early days the company manufactured mineral acids, the salts of iron, copper, zinc, and nickel; alum and ammonia; and dry colors. It was closely associated with the glass and pottery industries, just as more recently it has been identified with a special line of chemicals for the paper makers. The merger last year with American Cyanamid has again widened the scope of operations, for Kalbfleisch is obviously destined to be the heavy chemical division of this great and growing chemical group.

Upon the firm foundations laid down by his father, Franklin H. Kalbfleisch expanded the business. To the plant at Bushwick, in Brooklyn, were added production units at Buffalo and Bayonne, and he branched out further by organizing the Franklin H. Kalb-

# 1 Chemical Line

Upon this solid foundation, laid down a century ago, The Kalbfleisch Corporation has built a vast heavy chemical manufacturing enterprise.

fleisch Co.; the Erie Chemical Co., the Kaloid Company, and the Anatron Chemical Co. All of these allied enterprises were amalgamated into the present Kalbfleisch Corporation in 1913, at which time H. L. Derby first became associated with the company.

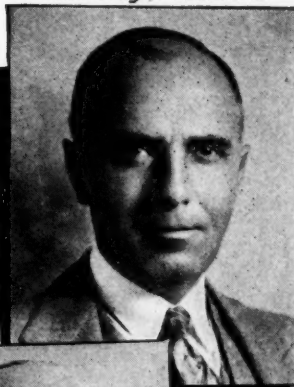
It was during this period that the close contacts with the paper industry began. To the sulfate of alumina was added china clay and casein, both imported. Bauxite mines were purchased to assure continued supply of high grade raw materials for the alum works. The manufacture of satin white was undertaken. Rosin size, now manufactured in four plants, became one of their specialties, and control over the modern development of the sizing art and many valuable patents were acquired by an alliance with the Process Engineers, Inc. of which J. A. De Cew was the active head.

## War-time Production

The World War forced expansions in other directions. Production was stepped up. Large tonnages of acids were turned out for munitions makers. The company was the chief source of supply of filter alum for water purification at the army cantonments. A major contribution was the first manufacture in America of sodium permanganate for use in gas masks. Practically the whole of the Kalbfleisch output was turned over to war uses and the plants had been extended and over-worked, so that the coming of peace brought with it a serious work of reconstruction and reorganization. Extensive repairs to the equipment were imperative. Old trade connections had to be established again and new ones made.

In this emergency Mr. Kalbfleisch turned to H. L. Derby. A younger man, so he felt, was needed for

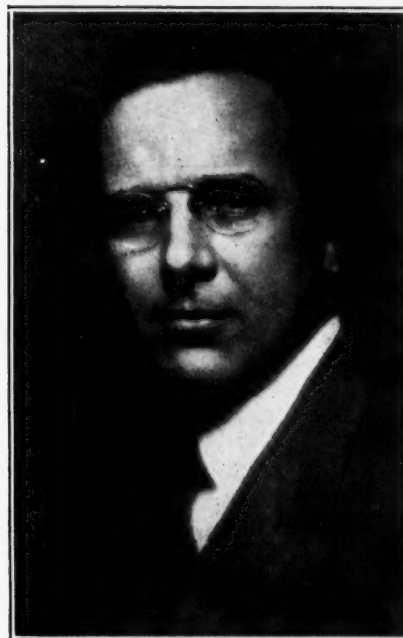
H.L. Derby, President



J.F. Fredriksson, Vice Pres.

A.B. Savage  
Vice Pres. and Treas.

P.M. Dinkins, Vice Pres.



A. C. Bate, Secretary and Director

this strenuous task of salvage and rebuilding. He turned the active management over to him with these sage and prophetic words:

"Young man you will do in this organization whatever you set out to do, if you are the kind of a man I think you are. You fix your own compensation. You

have to earn it. I don't know what you are worth. If you over-appraise yourself, I will find it out. If you under-appraise yourself, I will have less respect for you."

This was just ten years ago.

In 1920 the company owned five plants and five mines.

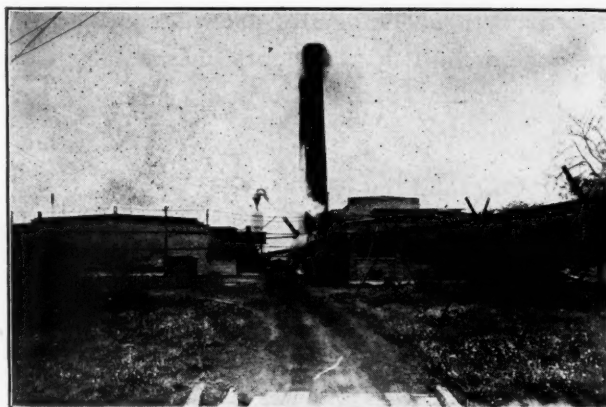
To-day the company is operating ten plants and seven mines.

The difference between "owned" and "operating" is an even more accurate gauge of the success of the present management than the physical growth of company property shown in those simple figures.

These going plants are situated at scattered, but wisely selected points to insure shipment service to the consuming industries: Elizabeth, N. J.; Waterbury, Conn.; Erie, Pa.; Chattanooga, Tenn.; De Quincy, La.; Kalamazoo, Mich.; Cincinnati, Ohio; Joliet, Ill.; Kokomo, Ind., and Camp Verde, Ariz. Six of the company's bauxite mines are located in the states of Georgia, and Arkansas, and the seventh in Dutch Guiana, South America.

The recent formation of the Arizona Chemical Company with plant and mines near Clarkdale, Ariz., carries The Kalbfleisch interests into a new field, and furnishes an apt example of the keen business acumen of the management. The growing production of

nitric acid by ammonia oxidation has cut down the supply of nitre cake while the increasing output of electrolytic muriatic acid has similarly curtailed the available supplies of salt cake. Sensing these interesting by-products of modern chemical progress, they



A recent acquisition, the plant at Joliet, Ill., where Vice-President J. W. Block is manager

have taken over these large deposits of natural sodium sulfate in order to be in a position to supply what plainly promises to be a world-wide shortage of salt cake.

### Remarkable Growth

Such activities suggest very naturally the reason for the remarkable record of Kalbfleisch progress under Mr. Derby's administration, as set forth vividly by the chart of the growth of the business which is reproduced here. But this energetic and farsighted executive would be the very first to pay tribute to his associates, especially to four of his "right hands" as he calls them.

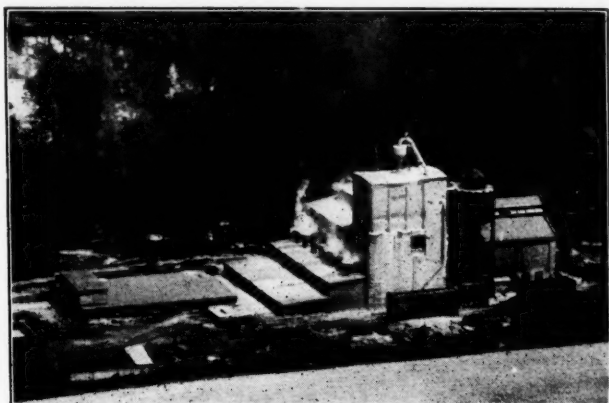
Veteran of the executive staff is Alfred B. Savage, one of the company's oldest officers, who is vice-president and treasurer. He joined the company in 1896 and it was he who wisely tended the company's resources through the trying period of the financial crisis that followed the war. J. F. Fredriksson and Philip M. Dinkins, vice-presidents in charge respectively of production and of sales, are, as it were, twin lieutenants, both having won their titles and places on the Board of Directors in 1926. In Mr. Fredriksson's manufacturing bailiwick are H. A. Kast, manager at the Elizabeth plant; J. A. Garde, Waterbury; R. A. Asbury, Erie; C. D. McCollister, Chattanooga; L. R. Vernon, Kalamazoo; J. W. Block, Joliet; D. J. Dougherty, Kokomo; W. A. Willis, Cincinnati; R. A. Asbury, Camp Verde, T. W. Asbury in charge of bauxite mining operation. Mr. Dinkins' various sales divisions are headed by J. D. Lowery, heavy chemicals; E. Y. Burckhalter, rosin size; George E. Taylor, the Wiarda division, J. M. Walsh, coating division. Arthur C. Bate, secretary and director, is well known to the paper and other



Graphic chart showing the growth of total sales of the Kalbfleisch Corporation under H. L. Derby's administration 1920—to first quarter of 1930

industries. He devotes a considerable portion of his time to sales.

The spirit of this far-flung organization is summed up by Mr. Derby when on the occasion of the company's hundredth anniversary banquet he said:



Another new Kalbfleisch production unit at Kokomo.  
Ind.—D. J. Dougherty, superintendent

"We have an historic background and a tradition to maintain. It is a very definite responsibility. It is one that we cannot take lightly. Back a century ago, the founder of The Kalbfleisch Corporation set up certain principles, certain standards. Those have

been carried down through generations, until to-day we find ourselves in possession of the responsibilities of carrying on. Martin Kalbfleisch and his son, Franklin H., fixed the standard of quality as his motto and I know no one in our organization would depart from that. We are tempted at times—financially tempted. We know if we would let down in our standards for certain business that could be had on a lower basis we could get that business, but we also know, when we stop to think, that as soon as we do that no longer will the name "Kalbfleisch" be the symbol of quality."

## German and United States Chemical Export Growth and Changes

Germany and the United States, the two largest world exporters of chemicals and allied products, had a combined export trade of \$550,000,000 in 1929, more than half the total world trade. German chemical exports usually running around \$150,000,000 more than those of the United States. Since 1913 the United States has shown a much greater proportional increase, 157 per cent, while Germany advanced only 53 per cent. On the whole the United States participation in foreign chemical markets has become decidedly more diversified and distribution wider, according to the Department of Commerce.

Dyes accounted for nearly one-quarter of the value of the German chemical exports in 1913 and only about one-seventh in 1929. Coal tar crudes and intermediates also held a conspicuous place then, but now, with the exception of the heavy oils, these have fallen back markedly. Synthetic camphor, although exported in 1913, has now assumed the position of one of the leading export items, with \$2,500,000 worth. In the paint and pigment group the shifting from the more or less crude materials to the highly finished commodity also was evident, with smaller quantities of the pigments and considerably larger amounts of the prepared paints, lacquers and varnishes shipped abroad.

The really salient change, however, has been the development in synthetic nitrogenous fertilizers. In 1929 German exports were topheavy with nitrogenous products, nitrogenous products accounting for one-fifth of the total chemical exports. Since 1913 fertilizers have assumed greater importance, advancing from 25 to 30 per cent of the total, chiefly on account of the rise of synthetic ammonium, sulfate, urea, calcium nitrate, sodium nitrate and other nitrogenous compounds, superphosphates and basic phosphate slag sharply declined.

Of the total chemical exports from Germany to Europe, 30 per cent, or \$60,000,000 worth, is made up of fertilizers, compared with only 6 per cent, or \$5,000,000 worth, of the exports from the United States to this region. Germany's post-war specialization in the development of synthetic nitrogenous products and its long established potash markets make it the logical supplier of the greater portion of the big European consumption of fertilizers.

Production of 66 degrees Be sulfuric acid in Canada in 1929, totals 110,749 tons, valued at \$1,375,599, as compared with 96,227 tons worth \$1,077,836 in 1928. Exports of sulfuric acid amounted to 8,394 tons, worth \$91,634, as against 13,329 tons valued at \$152,544 in the previous year. Practically all the acid was shipped to the United States. Imports totalled only 111 tons valued at \$10,287, compared with 55 tons, valued at \$8,652 in 1928. Only 7 plants in Canada made sulfuric acid during 1929, these firms used 10,461 tons of pyrite, and 25,978 tons of sulfur, and two plants made sulfuric acid from waste smelter gases.

## Three Sound Reasons

why you should use our

## Sulphate of Soda Extra

for standardizing anilines.

Because it is

**FREE from IRON**  
**FREE from AMMONIA**  
**STRICTLY NEUTRAL**

**The Kalbfleisch Corporation**

**31 Union Square, West  
New York**

Even ten years ago (as shown by this exact reproduction of their advertisement in our pages) Kalbfleisch used "printed salesmanship." Their advertising to-day is handled by the Hazard Advertising Corp.



# Chemicals to th

*For eighty-four years the old  
Dwight, pioneer American manu-  
have merchandized  
retail channels*

*New  
fact  
this  
to t*

It seems a simple idea now, that one which started this firm which to-day stands as the only one to sell baking soda in packages to the ultimate consumer on a nationwide basis. Previously the housewives in all of their baking used material imported from England. John Dwight saw no reason why he shouldn't satisfy at least the demand of his neighbors for the soda, so in 1846, associated with his brother-in-law, Dr. Austin Church, he began the manufacture of bicarbonate of soda in this country, the first factory being the kitchen of his New England home.

**O**RDINARILY one does not think of chemicals as being sold direct to the public. Certainly we should hardly look within our own industry for a shining example of retail distribution. Our recent discussions of packaged chemicals has seemed very modern indeed, almost revolutionary.

This is only because we do not commonly think of the firm of Church & Dwight. They have so thoroughly identified themselves and their chemicals with the packaged line, sold through the grocery and allied trades direct to the housewife, that we forget their chemical origin.

## Pioneer Bicarbonate Manufacturer

Started as a pioneer American maker of bicarbonate of soda, they have always moved their product through retail distribution channels. From paper bag to lithographed carton with patented opening—"we couldn't improve the product, so we improved the container"; from word o' mouth recommendations from neighbor to neighbor to a national advertising campaign in the women's magazines; from house to house peddling to the country-wide grocery chain; through all these changes and developments this old established chemical house has kept abreast of the evolution in our retail distribution system.



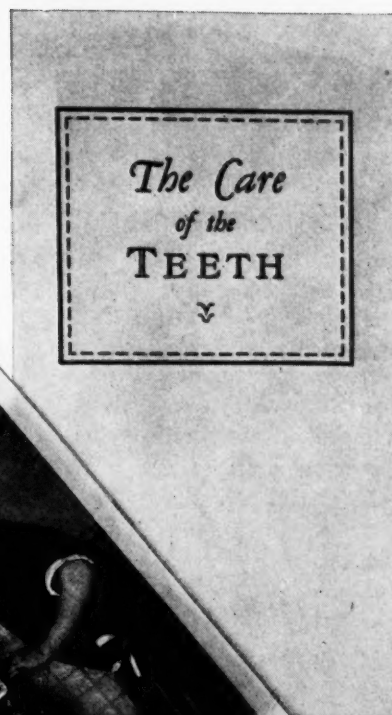
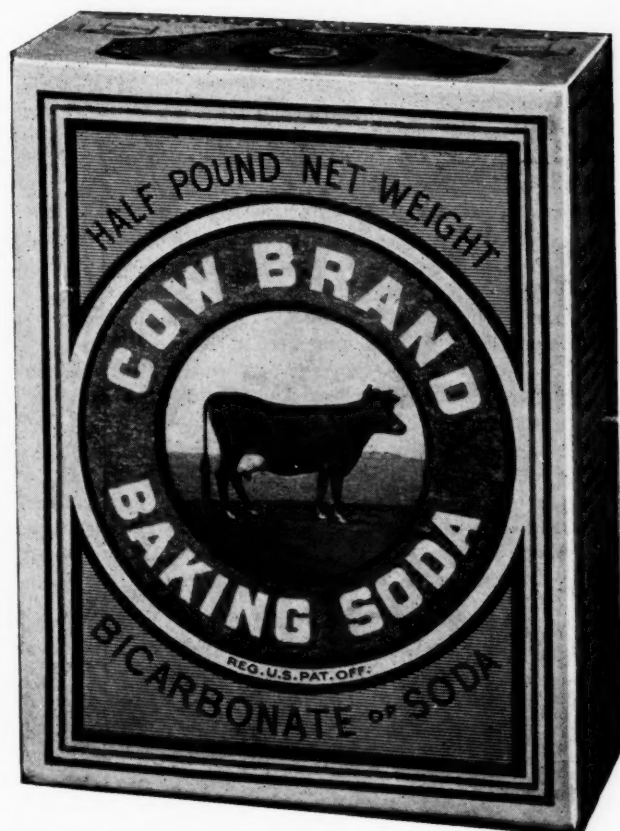
# the Consumer

*New England firm of Church & Co. manufacturers of sodium bicarbonate this product through to the housewife.*

In 1847, the firm of John Dwight & Co. was formed and the "Cow Brand" adopted as a trade-mark for "Dwight's Saleratus" (aerated salt) as it was called. The standard package at that time was a paper bag weighing one pound. The cow was adopted as a trade-mark because of the use of sour milk with the soda in baking.

## Formation of Church & Co.

In 1865, Dr. Church felt that the greatly increased demand for the product justified the development of a larger production facilities, so he formed a sepa-



rate organization known as Church & Co., which adopted as a trade-mark the "Arm & Hammer Brand" to identify its product.

In 1896, the descendants of the founders of these two companies consolidated their interests as Church & Dwight, retaining both brands. To-day the business is being carried on by the grandsons of the original founders.

## Changing Merchandising Methods

Perhaps the chief interest in the history of this company's development lies in the changing merchandising methods of the past eighty-four years. In the very early days the product was sold directly to the neighboring housewives. But once that preliminary stage was passed and right up until the present day, the chief outlet has been the local grocery store. Slowly but surely, as the demand spread from community to community, from its humble birthplace in New England, and the firm increased its sales to the local grocer, and later, as methods changed, to the district dealer, jobber, wholesale grocer, and chain store headquarters. In some few instances, sales are made in bulk and the material packaged

and sold under various private brands, serving local communities.

Until comparatively recently the sales appeal has been made directly and almost exclusively to the rural community, where home baking is still prevalent. The business started on the basis of consumption for domestic baking and it still depends for the bulk of its sales upon that same outlet. But the company has realized that, although the demand for its product for home baking is to-day greater than ever, nevertheless the decline is not far in the future. For the large bread companies are spreading their deliveries even into the most rural territories. Good roads and motors are not only widening the area of local delivery, but they are also making it easier for farm families to come to town for their supplies.

## **CHURCH & DWIGHT Co.**

**80 Maiden Lane  
New York**

**Bicarbonate of Soda  
Sal Soda  
Monohydrate of Soda**

*Reproduction (exact size) of the advertisement of Church & Dwight Co., in CHEMICAL MARKETS during June 1920.*

Consequently, a policy of broader sales appeal was instituted several years ago. Until that time, throughout the entire period of its development, the company had depended upon word of mouth and direct-by-mail advertising to carry the message of its products to the housewife. The salesmen would secure lists of names from the grocers for mailing purposes, and the names thus secured were circularized. But when it was decided that a broader sales appeal must be made, a carefully planned magazine advertising program was entered into. Practically all magazines going into the home are used; and the copy, while concentrating upon the use of sodium bicarbonate as a dentifrice, also stresses its many and varied uses in the home, aside from its age-old use in baking. Attractive booklets are distributed by the company describing the economy and desirability of sodium bicarbonate in many different phases of housekeeping and personal hygiene.

### **Package Improvements**

The package has also changed from the original one-pound paper bag, filled and weighed by hand, to the present lithographed cardboard container, with the patent opener. But throughout the years, the Cow and the Arm and Hammer have been fea-

tured. These trade marks have always been the most prominent feature on the package. Their value has been recognized from the earliest days of the business. Practically the first step in the successful merchandising of this product was the adoption and featuring of the brand, or trade-mark.

### **Brands and Territories**

To-day the Arm and Hammer is the predominant brand, because it is that brand best known outside of the Eastern States. The "Cow Brand" had already won for itself a strong foothold in the East, when the "Arm and Hammer" first made its appearance, so naturally the sales effort of the latter was concentrated upon new territory. It is to that fact that the "Arm and Hammer" owes its position today, for the Eastern territory, being more urban in nature, does not provide the same large outlet as the West and South with far more isolated rural communities.

Whether the pendulum will swing back again with the development of newer and broader sales appeal remains to be seen, but to Church & Dwight, pioneer in packaged chemicals, the problems of the coming years should present no more difficulty than have those of the past.

### **Ruhr Producing Much Nitrogen**

Ruhr Chemical Co., which was founded two years ago by the German Steel Trust, Krupp's, and other leaders of heavy industry in the Ruhr, with the financial backing of the Dillon Read banking interests of New York, started production last year with plant capable of turning out fertilizers equivalent to 16,000 to 20,000 tons of nitrogen a year. By 1931 the company expects to be producing about the equivalent of 50,000 tons of nitrogen, and to be absorbing 250 million cubic metres of gas, which, until the inauguration of this scheme, was flaming as waste into the air.

Germany is at present producing about 800,000 tons of nitrogen a year, about one-third of which is exported. Although the Ruhr enterprise, utilizing a by-product of the industries by which it is owned, and availing itself of the cheap transport provided by the Rhine, is able to produce considerably more cheaply than other concerns, it is not undercutting prices, but has concluded a sales agreement with the German Nitrogen Syndicate, which is in turn linked up with international interests responsible for 90 per cent of world production.

The scheme adopted for the utilization of the waste coke-oven gas of the Ruhr is one of the most economically comprehensive of all those involved in the process of post-war rationalization in Germany. The surplus gas, produced in the course of coke-manufacture, is conveyed to the plant of the Ruhr Chemical Co., where 50 per cent of hydrogen and eight to 12 per cent of nitrogen is extracted. The residue, undiminished in heating value, is returned for use by the steel companies for heating purposes. Continuous research is maintained by the enterprise into fresh possibilities for its by-products, one of the most important being methane, for which a future is predicted as a motor fuel.

Canada produces \$168,596,892 worth of chemicals in 1929, an increase of 14 per cent over preceding year, advance in value being \$21,623,055. Output was highest since war. Imports were valued at \$40,131,178 as against \$36,963,694. Estimated consumption of chemicals was valued at \$186,902,374 as compared with \$165,582,886. Plants manufacturing chemicals and related products numbered 549, with total capital of \$172,374-686 and 16,791 employees.

# Dr. Julius Klein discusses

## Men and Mergers



**I**N JANUARY, at the peak of the distress period there were to be found in almost any large employment agency probably from fifteen to thirty men, anxiously endeavoring to find new posts—

most of them on the "shady side" of 50. And the majority were business executives who had been earning salaries that ranged anywhere from \$10,000 to \$50,000 a year. They represented a vital, dynamic element in commerce: namely, business brains.

The executive, the office worker, or salesman who, through long training and wide experience, has become highly capable and proficient in services concerned with a given line of merchandise may believe that he is reasonably secure in his position. Yet the rapidly changing conditions of modern business may actually be rendering his situation precarious. Quite unexpectedly, a merger may occur, and if that happens there are certain to be drastic shake-ups and readjustments in personnel. Possibly the staff will be substantially reduced, in the interest, chiefly, of economical operation.

Some may say that a combination and reorganization of this kind provides an opportunity to "get rid of deadwood"—to dispense with the services of men whose usefulness has been outlived and who are considered an encumbrance. Even toward such men, any callous or unresponsive attitude is not only inhuman but, as I hope to show you in a moment, wastefully shortsighted. Such radical shifts and consolidations generally mean the discarding, not merely of some "deadwood" but also of much solid "heartwood" toughened by years of valuable experience

What is the Chemical Industry going to do to salvage the experience and contacts of executives forced out of their responsible positions by conditions beyond their control?

that we can not afford to lose.

Many a skillful, expert executive loses his job through mergers or in consequence of other causes that involve no fault, or lack, or error on his part. Any serious modifica-

tion in a company's mode of operation—in its scheme or scope of activity—may transform him from a seemingly indispensable employee into one whose presence on the payroll appears superfluous.

The personal predicament of such an employee is likely to result in grievous anxiety, financial stringency, and impaired buying power. His inescapable obligations and family duties may make it vitally necessary for him to procure other employment at once.

But these merely personal considerations, however pressing they may be, are hardly of as great importance as the economic loss that such a situation entails. Here we have a man who has possibly spent his life in acquainting himself with all aspects of an industry—in mastering all the facts about a particular class of chemicals. He has stored up specialized knowledge—replaceable, perhaps, only after long years of experience similar to his own. He has formed priceless personal contacts. He has established many bonds of intimate understanding. And all these things have made him peculiarly valuable to any business enterprise within his chosen field.

Is such experience to be lost to his industry when it may well need precisely such specialized ability as an asset in the ever-tightening pressure of competition with other industries? Is such a fund of "trained capital" (so to speak) to lie sterile and useless, possibly for months, while this man hunts desperately for

another job? Or, is he to be compelled to accept work in a *different* industry, in which a very substantial part of his slowly acquired skill and knowledge will go for naught?

Plainly, from whatever standpoint we may look at them, such shifts are most regrettable. And if such a man is obliged to begin again much farther down the ladder than the rung that he had occupied he is apt to be a embittered, resentful man, deprived in part at least of his former resiliency, energy, and hope and his subsequent contribution to the business world—and, through business, to society—may be of steadily lessening significance and worth.

### Industry is a Loser

Such an unfortunate situation should not be permitted to occur, if forethought and co-operative planning can prevent it. No industry can afford to lose the wisdom and ability of those men and women who have been trained in its ways, have indisputably "made good," and have been displaced simply by reason of strong but ill-controlled forces to which our business evolution has given rise.

Should there not be a voluntary, co-operative, effective effort by each industry to find jobs within its ranks for those of its veterans who may be idle? The industry would greatly benefit by carefully retaining such ability within its ranks, instead of allowing it to go to waste, or to be smothered and distorted elsewhere? Should there not be a definite, vigorous, active, central agency, within each industry and maintained by it, devoted to the speedy replacement of the industry's unemployed, with special attention to the trained executive?

### A Good Example

It is rather strange that business organizations such as trade associations, which have accomplished so much in other ways, have done so little to advance this deeply vital aim. But a start has been made just recently—and the success of the first experiment is exceedingly satisfying, thus far. The credit for this move belongs to the Associated Grocery Manufacturers of America. This association has established a Personnel Bureau, the purpose of which is to take quick action in finding jobs in the grocery industry for persons of experience in that field who happen to be let out of work.

Its president, George D. Olds, Jr., rightly contends that when competent men in one field are forced to enter another and alien one, business "is cheating itself out of millions of dollars annually." "We expect," Mr. Olds says, "that our Personnel Bureau will pay handsome dividends in creating a better morale among workers in the industry."

A number of recent instances show just how this "employment clearing-house" in the grocery industry

operates. A manufacturer in Wisconsin telegraphed his requirement for an assistant sales manager. As a result of a merger, a man from a northern New Jersey grocery firm had just become available. A contact was established, and he was engaged at an annual salary of \$9,000. The time involved in this transaction was 15 days. The industry not only does the square thing in thus "taking care of its own"; it does the prudent thing of not letting valuable grocery experience be lost to the business.

A Chicago manufacturer needed representatives in Pittsburgh, Minneapolis, and Kansas City. Within two weeks, the Personnel Bureau of the industry had furnished all three men.

### Order vs. Chaos

Just the other day one of the large grocery companies requisitioned twenty experienced salesmen, to be supplied within the next few days. This means that twenty good men will be placed, almost at once, in as many good jobs. They will be promptly connected with a payroll in an orderly and efficient manner, with a complete avoidance of the chaos, uproar, and uncertainty which is usually connected with taking on a group of this size and which would prevail, especially, if the men had to be selected from the hundreds of inexperienced applicants who would ordinarily respond to a public notice.

Such a system is a splendid example of the manner in which any given industry, through intelligent, energetic, organized activity, can "take care of its own people" with respect to employment—serving, thereby, every element in the trade and preventing a great deal of distress and bafflement, wasted motion and wasted experience.

### Germany Leads in Cyanamide Output

World production of calcium cyanamide is estimated to be over 1,000,000 metric tons annually. Germany is the world's largest producer of this product followed by Poland and Japan. The following table compiled from the International Yearbook of Agricultural Statistics for 1928-1929, published at Rome, shows in metric tons the production of calcium cyanamide for the principal countries of the world.

	1913 Tons	1925 Tons	1926 Tons	1927 Tons	1928 Tons
Germany (1).....	48,500	350,000	420,000	440,000	50,000
France.....	12,446	55,000	55,000	53,000	50,000
Italy.....	14,982	37,750	44,830	38,800	55,000
Norway.....	22,110	8,000	21,000		
Poland.....		85,754	117,932	143,499	154,893
Sweden.....	18,352	34,369	37,311	24,473	
Switzerland.....		25,000	27,000	26,000	23,000
Czechoslovakia.....		4,928	13,662	22,271	25,152
Canada.....	48,000	70,000	75,000	80,000	77,000
Japan.....	7,000	121,757	140,675	120,405	

(1) Nonofficial data.

German chemical production for 1929 is placed by the Department of Commerce at approximately 4,000,000 marks, or close to \$4,000,000,000. About one-fifth of the total production was accounted for by artificial nitrogen carriers and one-eighth by dyes. While the 1929 production was an increase over that of 1928, the increase was not as great as in former years. It is believed that the present production is about equal to the demand, says the Department of Commerce.

# What is

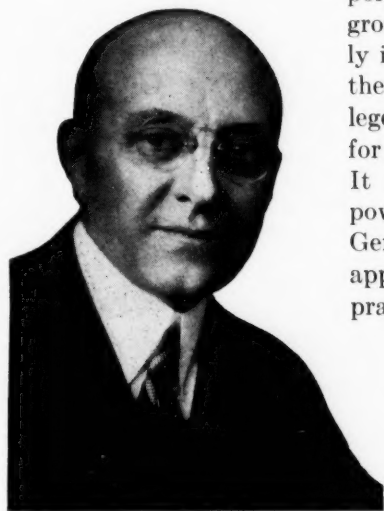
*the present government  
attitude in regard to*

THE Attorney General of the United States is not and cannot be an arbiter in the field of economic interests. His powers and his duties relate solely to the enforcement of law. It is not within his power to change the legal standards of business conduct as defined by Congress and the Courts, and if you stop to reflect upon this, you will not wish him either to have or to attempt to exercise any such power.

The conduct of business should be guided by standards of law and not by the discretion or caprice of any official. All of us know only too well that difficulty and often danger arises when officials of Government undertake to regulate by their individual standards of discretion the intricate problems of the business world.

In dealing with the subject of monopoly and combination, the powers of the Attorney General are clearly defined. He alone is vested with power to enforce the Sherman Act. It is his duty to act when practices unduly restrain or interfere with the free flow of interstate commerce. His powers in respect to the trust laws are limited to this special field of business activity. He has neither the express nor the implied power to interfere with or attempt to guide the internal affairs of business organizations or trade associations, nor has he any desire to do this.

The Department of Justice is, therefore, interested only in the acts and conduct of individuals and corporations. It deals with groups of individuals only in those cases where the individuals are alleged to have combined for some illegal purpose. It is not within the power of the Attorney General affirmatively to approve trade rules or practices. A practical



*Abstracted from an address before the U. S. Chamber of Commerce, May 1, 1930.*

## Unfair Competition

reason for not attempting this is that neither he nor any other law officer can accurately forecast what individuals may undertake to do in a particular industry pursuant to trade rules. In short, the Department of Justice is not concerned with "Codes of Ethics" or Codes of "Trade Rules" or "Trade Plans" unless illegal practices result from their operations or unless (as in rare cases) the rules on their face obviously contemplate action which if taken would be unlawful.

### Conferences Encouraged

The Federal Trade Commission is in a somewhat different case. While it has no jurisdiction to enforce the Sherman Anti-Trust Act it has jurisdiction to investigate unlawful practices and to enforce provisions of the Clayton Act.

In the exercise of its jurisdiction to deal with unfair practices the Commission has not confined its activities to investigations and prosecutions, but, in the desire to aid business, has developed the practice of holding conferences. Out of this has come the Federal Trade Practice Conference which, started as an experiment, has now become recognized as a valuable institution. The Department of Justice has no hostility to the Federal Trade Practice Conferences. On the contrary, it approves these conferences and believes that within their legitimate field they afford valuable opportunity for education and for constructive progress in industry. It also recognizes

*By the Hon. John Lord O'Brian*

*Head Anti-Trust Division, U. S. Department of Justice*

that these conferences belong to the province of the Federal Trade Commission with whose activities the Department has not interfered and with whose aims it is in harmony.

Trade Associations are the result of similar natural evolution and business necessity. The Courts have long since recognized their legitimate functions and have fully appreciated their powerful influence. As I have already stated, the law officers of the Department of Justice are well aware of these facts and they have no interest and no point of view adverse to the proper activities of trade associations. In fact they have no concern with the affairs of those associations except as individual members, through the use of these associations or their rules, may adopt practices which lead to violation of the anti-trust laws.

### **Occasional Bad Practices Found**

Perhaps it is only reasonable to expect that certain excesses of zeal are bound to occur in the experiments with business practices which are a feature of the evolution of the trade association. Candor, however, compels the statement that here and there such illegal practices do come to light. Fortunately they are not characteristic of the work of the great body of trade associations. Some of these practices are unlawful because discriminatory or because they aim at monopolization of channels of distribution, or for other reasons. But the complaint most often made is that of price fixing and in certain quarters convincing evidence of this practice has been found by the Department of Justice.

For many, many years the fixing of arbitrary prices by the agreement of competitors has been viewed as contrary to sane public policy. The courts have long since declared it to be illegal. There is nothing vague, intangible or difficult to understand about this practice. Everyone knows that it is illegal. No one can be engaged in this practice without knowing it, and no one needs a lawyer to tell him whether he is in fact fixing prices by means of understandings or agreements with competitors.

### **Trade Rules Not a Screen**

On this as on similar questions the Trade Commission and the Department of Justice are, so far as I know, entirely in harmony. Neither one has ever sanctioned or intended to sanction this practice. There have, nevertheless, been recent instances where this practice of price fixing has been attempted by the misuse of so-called Codes of Ethics or Trade Rules. Fortunately the number engaged in these practices is relatively inconsiderable and their conduct has not been imitated or approved by trade associations generally. In this one respect, at any rate, when individuals violate the law they must not expect to justify or excuse their illegal conduct by the adoption of formal resolutions or trade rules. Where these

illegal practices exist the Attorney General intends to check them by appropriate legal action. That is his duty. Fairness to the other trade associations, and justice to other business interests as well as to the public generally require that this duty be firmly and impartially performed.

But in all this there is no cause for anxiety or uncertainty in the business world. There are no revolutionary law policies impending. The number who take chances are relatively few, and those who take chances should not complain of the consequences. You will agree that no legal proceedings aimed at price-fixing should give the slightest concern to the business world in general and you need have no fear that any conflict of interest exists between the Trade Commission and the Department of Justice. There is no divergence in their aims. The Federal Trade Commission as well as the Attorney General and his staff desire sane administration of law as well as stability in business conditions.

### **Business Should Aid**

I have endeavored to make clear to you the attitude of the Attorney General and at the same time to point out the very distinct limitations which encompass his official activities. With this frank statement to you, we feel that we have a right to expect active co-operation from business. We ask that its numerous associations use their powerful influence to eliminate those business practices which result in price fixing by agreement and other practices which lead to illegality. The Anti-Trust laws are primarily aimed to protect the economic opportunity of the individual and to promote steadily rising standards of fairness and justice. All ought to work together to realize this purpose.

## **Russia Experiments**

### **With Synthetic Rubber**

Soviet scientists discover a new process for the synthetic production of rubber, employing petroleum residues as raw material. An experimental plant now being built will be equipped to produce 150 tons of rubber yearly. Only a certain special grade of petroleum lends itself to the production of rubber by the Russian process according to the Department of Commerce.

The present announcement that the Soviet authorities have decided to commence manufacture of synthetic rubber, though on a small scale, seems to indicate that the technical difficulties, previously encountered, have been overcome.

Russia's chemical tariff rates, in effect since February 15, are as follows (ad valorem percentage rates): Beeswax, glue, gelatine and candles, 100; natural mineral pigments, 100; graphite, 100; abrasives, 50; pitch and tar, 150; benzol, toluol, xylol, naphthalene, creosote, phenol, anthracene, 300; methyl alcohol and grey acetate of lime, 50; antimony and antimony preparations, 40; barium, potassium and sodium cyanides, arsenic, barium peroxide, boron minerals, 25; nitric acid, salicylic acid, benzoic acid, boric acid, acetic anhydride and phosphorus, 300; iodine and quinine, free; wood charcoal, free; bleaching powder, carbon bisulfide, lithopone and Prussian blue, 300; zinc white, white lead, calcium carbide, 200; alizarine, 250; essential oils and perfumes, natural and synthetic, 300; fertilizers and insecticides, free.

# PROFITS

*from*

## Dust Control

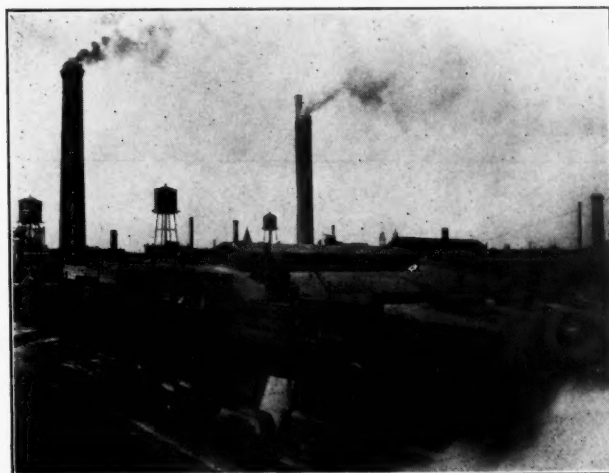


Figure 1. The whitish discharge from the center stack represents about four tons per day of zinc oxide—material which is now collected and sold

By E. H. de Coningh

Technical Editor, Dust Recovery and Conveying Co.

IN 1661 John Evelyn complained of "the hellish cloud of sea-borne coal which maketh the city of London resemble the suburbs of hell." In 1661 perhaps only London or one or two of the larger continental cities could have furnished just cause for such infernal comparison, but to-day we can adopt the simile to any manufacturing center.

A recent article characterizes dust as a cause of ill health; a contributor to the maintenance of a low social status and lack of self respect; and an obstacle to efficient plant operation. If such an indictment is true, we might reasonably wonder that dust control development did not appear about 1662. But the profit of dust elimination comes as much from the psychic income of improved conditions and worker morale as from the market value of the actual material recovered. And improvements in methods and equipment which depend upon intangible rewards have been slow to gain headway.

### Sales from Smoke

The earliest development of high efficiency dust-collecting equipment naturally came in that field where there was a direct tangible return from the investment. Smelter fume in the metallurgical industry was an unhealthy nuisance as free dust, but as recovered non-ferrous metallic oxides, it offered tangible value. So, with the dollars lure of by-product

recovery, and with the existing health hazard demanding improvement, a start was made. The old fashioned baghouse became a standard piece of smelter equipment, and the modern high efficiency fabric filter is its direct descendant. The whitish discharge from the secondary smelter stack in the center of Figure 1 represents about four tons a day of zinc oxide—material which is now collected, bagged, and sold.

### The High Value of Dust

One feature of dust loss which bears emphasis is the high value of many materials in the form of dust, where grinding is a part of the process. It generally costs more to pulverize a material from 20-mesh fineness to 300-mesh, than it does from its largest size to 20-mesh. And the dust loss occurs from the finest and most valuable material, after it has taken its due of wear and power from every machine in the production line.

As well as having the greatest value, this dust offers the greatest health hazard. Prof. Philip Drinker has shown that particles smaller than  $2\frac{1}{2}$  microns can pass the tortuous passages of the nose and throat to the alveolar spaces in the depths of the lungs. Here they are the greatest source of danger. The chemical composition of the particle is also a primary index of its danger, but while particles over

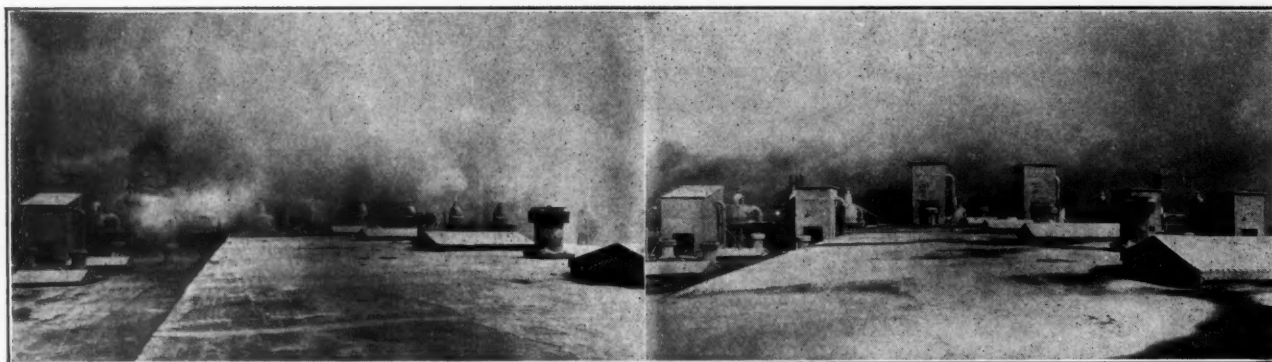


Figure 2 (left) shows the cloud of dust discharged from cyclone vents on air-swept pulverizing systems in a large chemical plant. Figure 3 (right) is the same scene after installation of complete filter equipment which recovers 99 per cent of the dust, including that which passes a 300-mesh screen

15 microns are usually caught and ejected from the respiratory tract, the finer ones are those which, once past our natural filter equipment, can achieve their nefarious purpose.

#### A Method for Every Dust

The high degree of fineness of most dusts requires correspondingly high efficiency of collecting equipment; but present development has devised methods and machines to cope with every industrial dust, with fume-mechanical collectors for the coarse material and electrical precipitation and fabric filters for the finer particles. Figure 2 shows the cloud of dust discharged from cyclone vents on air-swept pulverizing systems in a large chemical plant. The performance of a test unit led to the complete filter equipment, as indicated in Figure 3, to recover 99 per cent of all dust, including that which passes a 300-mesh screen. The dust cloud has vanished, the valuable fines are recovered, and the vicinity of the plant is a better place to live and work.

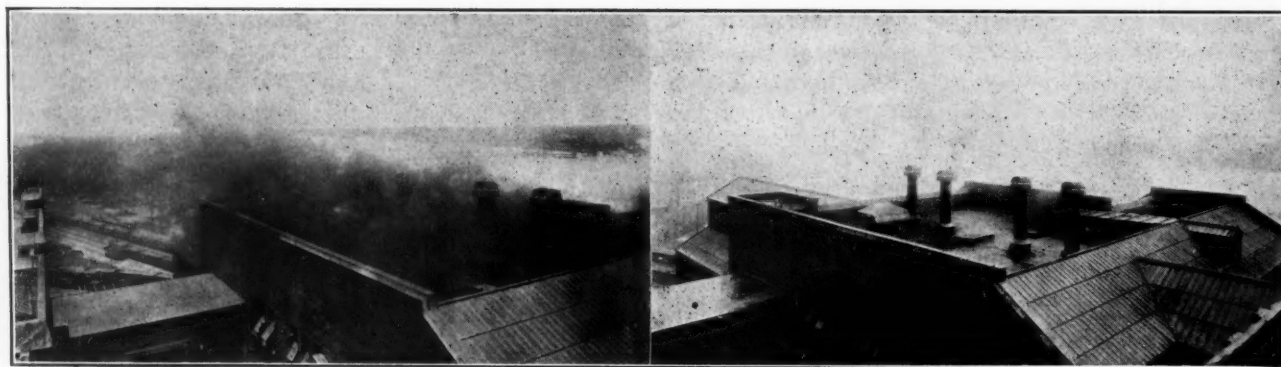
Figures 4 and 5 present visual records of the improvement effected by a public service corporation in its coal pulverizing equipment. Air filtration recovered all visible solids, in spite of their exceeding fineness, and the ton of coal dust which formerly escaped every hour to darken the surrounding landscape is now directed to the furnaces, where all good coal should go.

There are numerous examples of the incorporation of high efficiency collectors as integral portions of process equipment. In the spray drying of food products, for example, all the drying air must pass thru some collecting equipment to remove the entrained particles of dried material, which represent a substantial proportion of the finished product.

One manufacturer of spray dried infant food, which retails at \$1.25 per pound, has adapted high efficiency collectors above the drying chamber in such a manner that the fine material is continuously discharged back to the floor of the room. This makes it difficult to check the exact volume recovered, but a conservative estimate of the annual saving on approximately \$10,000 worth of equipment is \$50,000.

#### Oxides from Fumes

Non-ferrous metallic oxides recovered from the fume of secondary smelters are usually retreated to recover the metal, though there is some market for zinc oxides for low grade pigments. The product sells at a price of two to three cents a pound, depending upon the quantity and nature of the impurities, and provides a value return more than sufficient to amortize the investment in recovery equipment. One year's by-product recovery from the collectors at the plant, shown in Figure 1, will more than cover the cost and installation of the complete equipment.



Figures 4 and 5 which show the improvement effected by a public service corporation in its coal pulverizing equipment. Air filtration recovers the ton of coal dust per hour which formerly darkened the landscape, and directs it to the furnace where it is put to good use

Primary smelters operate on a much larger scale, of course, and special furnaces are installed to re-treat the fume recovered from collecting equipment—value recovery which has justified the expenditure, in more than one instance, of half a million dollars for collectors.

### Greater Returns

The intangible profit in dust elimination thru improvement in working conditions and cleanliness has increasing importance, and in many cases outweighs the cash return from the recovered material. To-day, of course, there are innumerable installations where the collected dust has no market whatever, and where the intangible return alone is deemed more than sufficient to finance the equipment. Dust control inside the plant has reached a gratifying stage of perfection, and has proven that it can pay its own way.

But the mere removal of a dust or fume from a machine or furnace, and its discharge thru a high stack, is a primitive solution of the problem of control. The atmosphere will not absorb an unlimited burden of solids without reprisals upon the whole community. Realization of the facts of atmospheric pollution is just beginning to dawn upon the lay public, and more and more discussion is appearing in the current periodicals and daily press. Figure 6 shows an example of a dust discharge which is typical of a condition that calls for control. About 48 tons of ash every day are carried over a metropolitan area from this power plant.

### Collection Must Be at Source

Some individuals have been forced by circumstances to an early consideration of the problem. High efficiency fabric collectors were installed to collect the stack discharge from a pulverized coal burning power plant and over 92 per cent of the recovered material is finer than 300-mesh screen—the fine ash and carbon which had previously been such a nuisance to the plant and to its neighbors.

And the inevitable result of public attention to atmospheric impurities will be a demand for collection at their source. Dr. MacLaurin, Trade Waste Commissioner of Cleveland, has shown that a cubic foot of that city's air contains an average of about 0.0004

grains of solid matter. A pulverized fuel burning power plant stack discharge frequently contains four grains of solids per cubic foot of gas, so it is obvious that 10,000 times as great a volume of air must be filtered to collect the solids after partial dilution in the atmosphere, as against a collector at the power plant stack.

### Forestalling Trouble

With these facts in mind, the far-sighted industrialist will lead public opinion in his favor, rather than lag behind to be coerced. The experience of a manufacturer in a middle western city points a moral to this tale. His process involved the grinding of a dust which was finally proven to cause asthmatic irritation. But, in the meantime, an epidemic of asthma disturbed the neighborhood, and received city-wide attention in the press. When responsibility was finally determined, filtering equipment was promptly installed, which completely eliminated the dust discharge, and removed any possible source of irritation. But so firmly fixed is this plant in the public consciousness as a source of trouble, that responsibility for every case of asthma in the city and suburbs is now laid at the manufacturer's doorstep, and

damage suits are still being instituted. Earlier attention to the situation would have avoided all the costly and unpleasant publicity, while now a defense before the courts and public is continually required for conditions which are in fact completely dustless and sanitary.

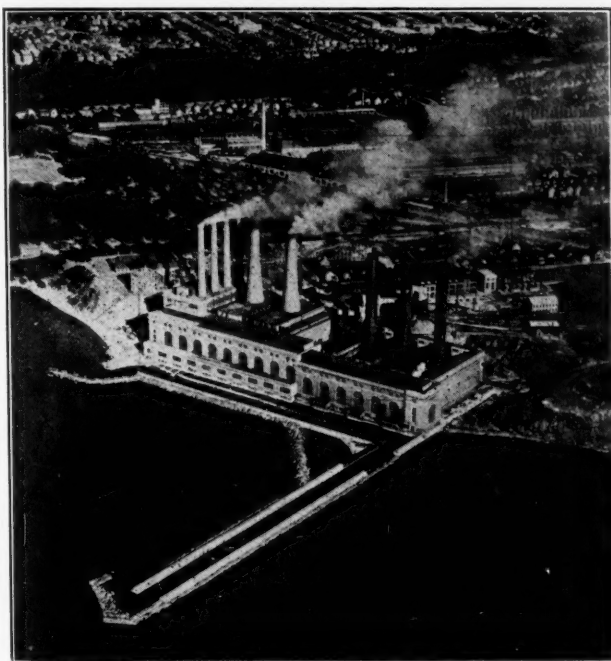
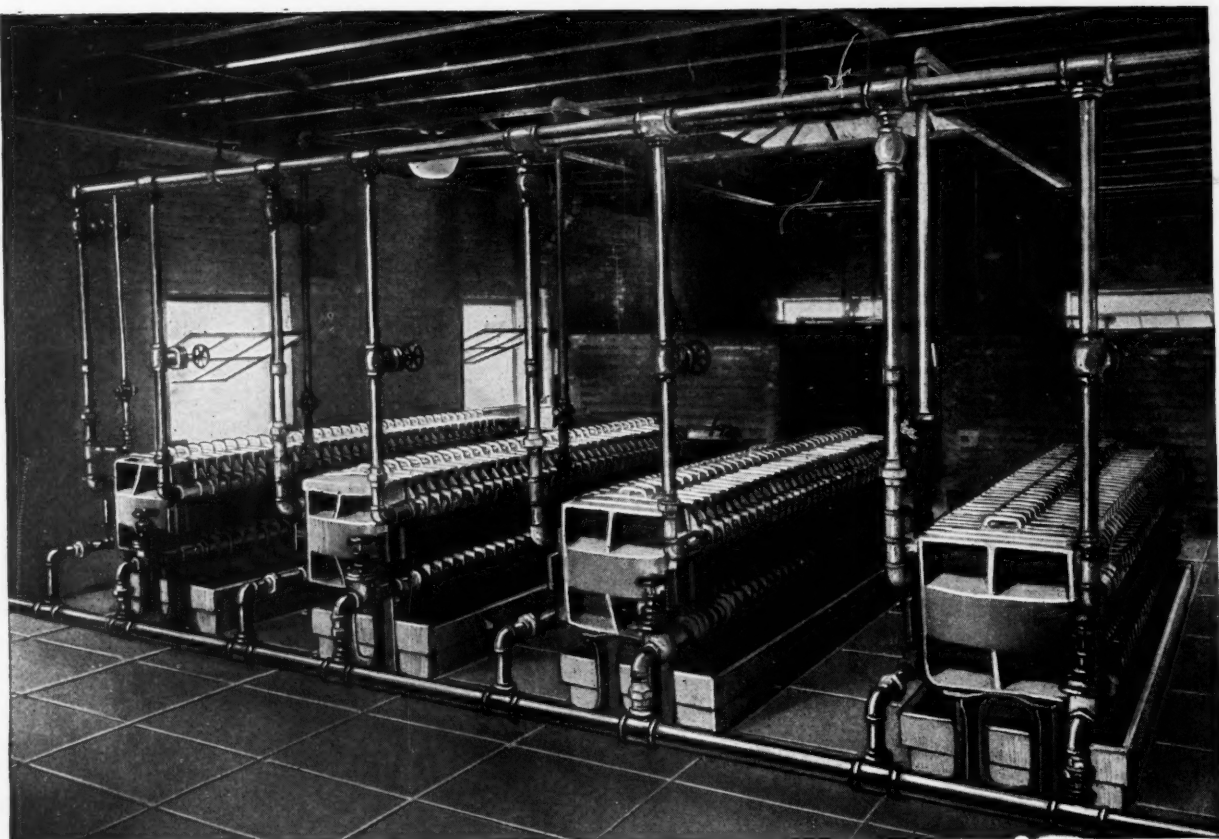


Figure 6. A dust discharge which is typical of a condition which calls for control. About 48 tons of ash per day are carried over a metropolitan area from this power plant

Mercury price fixed by Mercurio Europeo will remain unaltered, in accordance with its policy of stabilization notwithstanding that rumors have been set about among quicksilver buyers in European and other markets of the world, especially in the United States, reporting the possibility of a dissolution of the Italo-Spanish Syndicate, a consequence of changes in the Government in Spain—to be followed by a fall in the present price of the headquarters in Lausanne, owing to the competition that would arise between the two groups when realizing their respective stocks of mercury.

According to Mercurio Europeo, "there is no foundation whatever in these allegations which simply originate from the adversaries of their syndicate. There is no reason at all why the Spanish Government should be against the Italo-Spanish agreement."



## SHRIVER FILTER PRESSES

Far sighted manufacturers know from actual experience that the selection of a filter press is as important as the processing of their product. They know that to secure good production—good filter presses of the correct design, type and size for their particular problem must be employed.

For many, many years Shriver Filter Presses and Shriver Service have proven their worth in the realm of chemical and chemical process endeavor.

Bring your filtration problems to us. You'll find it of profit to consult with Shriver specialists. Your inquiries are solicited.

### T. SHRIVER & COMPANY

ESTABLISHED 1860

856 HAMILTON STREET

HARRISON - N. J.

A FILTER PRESS FOR EVERY PURPOSE

# SHRIVER



FILTER PRESSES

FILTER CLOTH

DIAPHRAGM PUMPS

# Perhaps You Should Use STONE

**A**CID proof stoneware is earthenware made from clays which are practically free from soluble salts, and which are burned at a sufficiently high temperature to be completely vitrified. In addition to its acid resisting qualities, it is also mechanically stronger than ordinary earthenware; the relative strength being as steel is to cast iron.

Various clays are selected on account of their low iron content, high bonding strength, and relatively small drying and burning shrinkage, and then blended to form the desired type of body. After being ground, the clays are taken to pits where they are allowed to age from six months to a year. During this ageing process the clays become inoculated with a tiny alga, which gives them the property of plasticity. After the ageing process, the clays are washed, filter-pressed, and pugged, and are then ready for the clay worker, who performs the final operation of "rubbing out" the clays before they are formed into the various

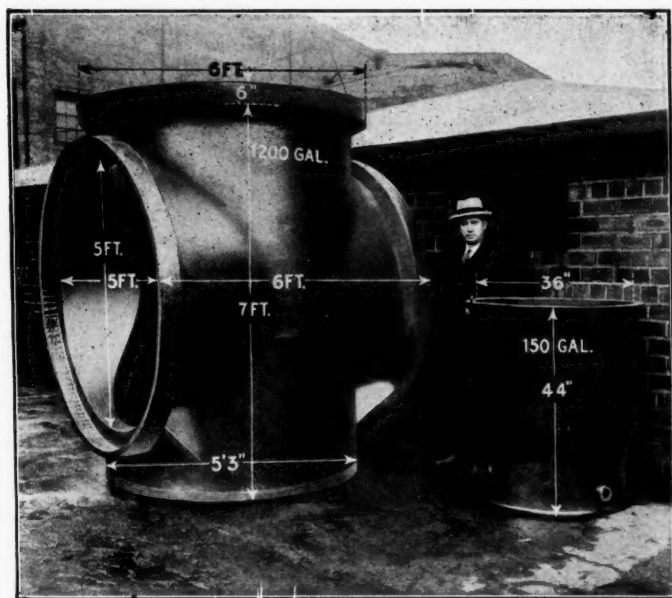
**Fred M. Kline in this article tells where and why stoneware possesses advantages over apparatus materials more often used.**

shapes. This process consists merely of rubbing out the clays into flat slabs, in order to eliminate all air bubbles. During the firing process this air would cause blowholes and other defects.

The forming of the clays into the various pieces of apparatus requires a good deal of skill, and the clay worker must be a highly specialized workman. Due to the large amount of shrinkage between the green clay and the burned ware, it is exceedingly difficult to obtain accuracy of dimensions in the finished piece. This accuracy of dimensions in the finished piece depends entirely upon the experience and skill of the manufacturer.

## **Apparatus to Specifications**

Since nearly all stoneware is entirely handmade, and for this reason quantity machine product is impossible, it has become the custom among larger chemical manufacturers to have their apparatus made up to their own specifications. As a result, an immense variety of stoneware is always being made. Small pieces, such as faucets with threaded shanks, are turned out on an ordinary machinist's lathe. Small containers are formed on the potter's wheel, either entirely by hand, or in a mould. Large pieces such as tower sections, tanks, jars, etc., are built up from slabs of clay, usually inside plaster of paris



*A sixty-inch cross for a fume duct*

forms. Other ware such as pipe, tower packing, and acid proof brick, are extruded by means of an auger press.

### The Importance of Drying

Proper drying of the ware is as difficult and important as the forming of the pieces themselves. It is essential that all moisture not chemically combined with the clay be removed, or else the ware will be ruined in the kiln. The slightest moisture in the ware would be transformed to steam under the terrific heat to which the ware is subjected. The pressure of entrapped steam would eventually become sufficient to blow the ware to pieces, and this sometimes does happen during firing. The drying requires from two to six weeks, depending upon the thickness of the clay. Speeding up drying by means of an automatic humidity dryer has not been generally successful, and air drying is usually practised.

The burning requires from ten to twelve days. Beehive type kilns equipped with down drafts are usually used. The ware is stacked in the kiln on a checker work of brick in order to bring it into the hottest portion of the kiln. The temperature is very gradually brought up to the vitrification point, which ranges from 2400° to 2700° F, at which point the salt glaze is formed on the ware. This glaze is formed by chemically combining sodium oxide with the aluminum silicate of the clays. This is accomplished very simply by throwing ordinary salt into the fire. The salt breaks up into sodium oxide and chlorine, and the sodium oxide combines, with the white hot clay to form the glaze. At this point the fires are banked, the kiln is sealed, and the ware allowed to

cool very gradually. The slow cooling serves to temper the ware, and prevents its becoming brittle.

The chief advantage acid proof stoneware offers the chemical manufacturer is its ability to resist the corrosive action of nearly every chemical regardless of its concentration. The sole exceptions are hydrofluoric acid and hot concentrated phosphoric acid.

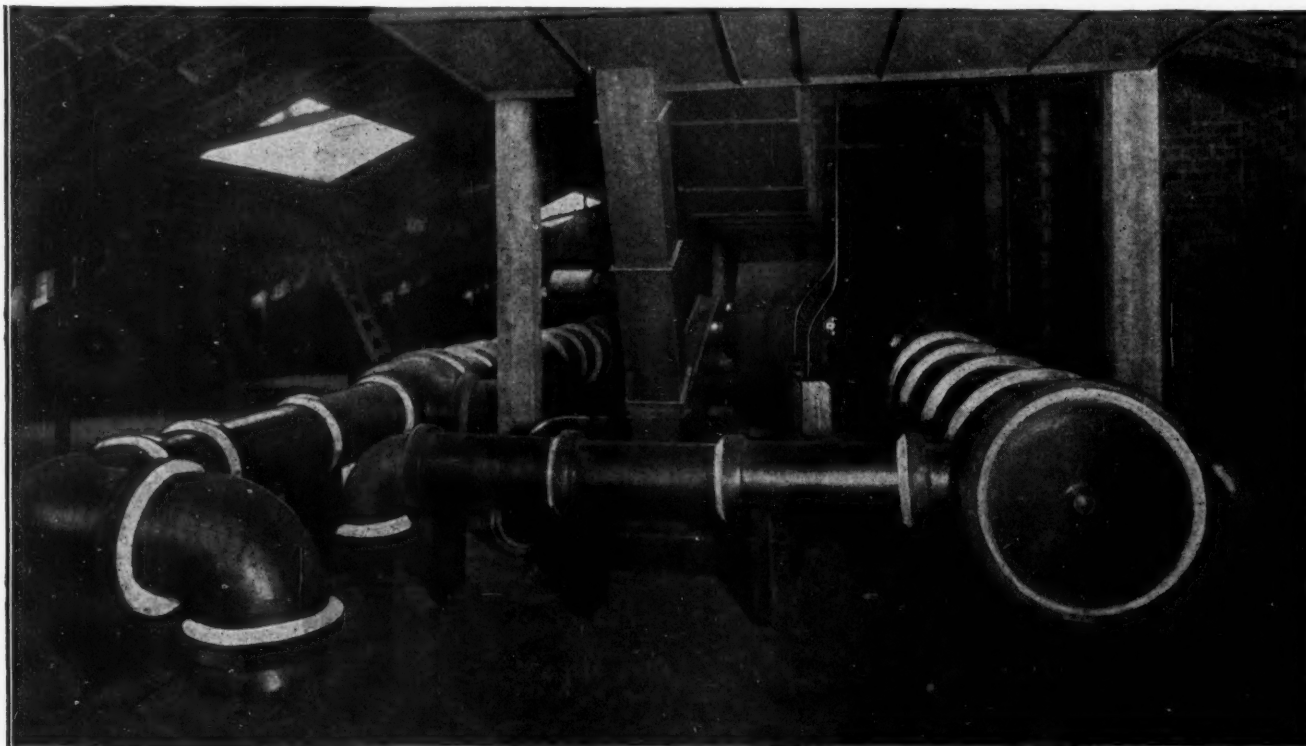
This unusually advantageous quality, strange to say, is not widely known, and often expensive alloys are used for the manufacture of apparatus where acid proof stoneware would serve better at a fractional cost. As an example, stainless steel is often used for piping, tanks, and other equipment where no great mechanical strength is required, even though it is quite readily attacked by many acids and chemicals.

### Corrosive and Electrical Resistance

Where corrosive resistance and electrical resistance are both required, acid proof stoneware is again an ideal material. It is also a quite satisfactory heat insulator.

Acid proof stoneware offers still another advantage in the ease with which it can be made up in special shapes. Practically any piece of apparatus which can be made up in metal can be manufactured in acid proof stoneware with certain limitations; these limitations refer principally to tensile strength and closeness to which dimensions must be held.

An immense variety of equipment for almost every type of industry has been made up in acid proof stoneware. The sizes vary from a one pint acid pitcher to an eight hundred gallon one piece container, and the variety from a coffee urn lining to a complicated etching machine. One of the most im-



*Stoneware vent ducts at the University of West Virginia*

Pure

# MONSANTO PHENOL U. S. P.

For all the varied uses of Phenol U. S. P. critical buyers prefer the Monsanto product. It is particularly adapted for use in synthetic resins. Always pure and uniform, Monsanto Phenol gives complete satisfaction.

Available for prompt shipment in tins and drums or in tank cars. Order now from St. Louis or nearest district office.

## Other MONSANTO Chemicals

ORTHONITROCHLOR-  
BENZENE  
ORTHOCHLORANILINE  
ORTHONITRANILINE  
ORTHOPHENETIDIN  
PARADICHLORBENZENE  
PARANITRANILINE  
PARANITROPHENOL  
PHTHALIC ANHYDRIDE  
SODIUM ACETATE  
(Crystal and Anhydrous)

## Monsanto Chemicals



**Monsanto Chemical Works**  
**ST. LOUIS, U.S.A.**

*District Offices at*

10 East 40th St.    500 No. Dearborn    373 Brannan St.    Victoria Station House, Victoria St.  
NEW YORK    CHICAGO    SAN FRANCISCO    LONDON S. W. 1

*Divisions:*—Merrimac Chemical Co., Inc., Boston, Mass.    The Rubber Service Laboratories Co.,  
Akron, Ohio    Graesser-Monsanto Chemical Works, Ltd., London, England



# CHEMICAL

## *Photographic View*



*Dow joins the uptown parade: the company's new offices, Lincoln Building, New York, with Ralph E. Dorland, Eastern manager, in his private office*

*Below: Not a battery of anti-aircraft guns but increasing the arsenate demand by night dusting in a Michigan orchard. (International Harvester Co.)*



# NEWS REEL

## *of Chemical Progress*



Facsimile of the gold medal awarded to Bernard Jaffe whose book, "Crucibles: The Lives and Achievements of the Great Chemists", won the \$7,500 Francis Bacon prize for humanizing knowledge, sponsored by the Forum Magazine and Simon & Schuster

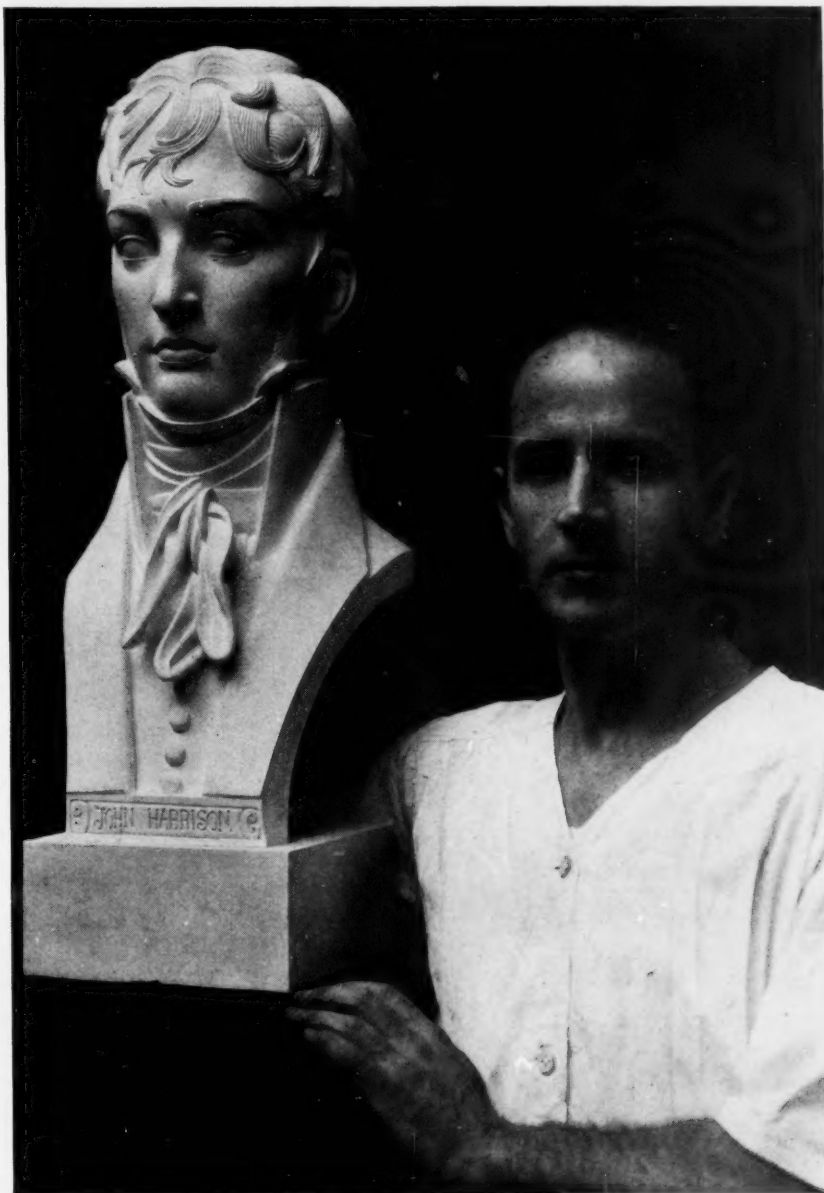


The President's Safety Trophy presented by Edgar M. Queeny to be awarded quarterly to the Monsanto plant having the best safety record. Five times insures permanent possession



Hazard Advertising Corp. shows the John Held influence in this map of the Grand Central district distributed to friends and clients to inform them of the new location of the company's offices in New York

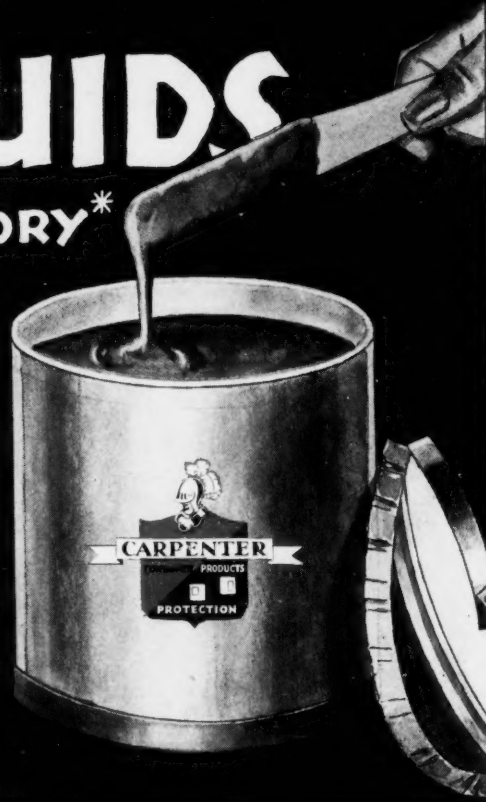
The industry goes artistic! Lawrence Tenny Stevens, Prix de Rome man, sculptor, standing in his studio beside the bust-portrait of John Harrison, first American Chemical manufacturer. The sculptor has been commissioned to design a full length figure, more than heroic in size, which will be placed in Fairmount Park, Philadelphia. (Dorr News Service)



# SEMI-LIQUIDS

AND OTHER PRODUCTS NOT DRY\*

can't  
dry  
out



When packed in the  
new hermetic type

**CARPENTER  
... DRUM**

**A**CTUAL two-year tests with troublesome semi-liquids prove that Carpenter Drums keep the moisture in.

Manufacturers who use Carpenter Drums have stopped serious profit leaks . . . and have increased their reputation for dependable quality.

Recommended for: *Varnish Paste . . . Sulphur Paste . . . Rubber Cement . . . Refractory Cement . . . Adhesives . . . Pulp Colors . . . Latex . . . Greases*

Our research has adapted the Carpenter Drum to meet the bulk shipping needs of many products in paste and semi-liquid form. Made of strong fibre shell, with wooden head. Full open top permits easy access . . . patent triple seal closure can be easily re-sealed . . . no metal to corrode . . . handsome, strong! Approved by I. C. C. Capacity . . . 10 to 375 pounds . . . 1 to 51 gallons.

CARPENTER CONTAINER CORPORATION—Executive Offices, Technical and Research Departments  
137-147 41st STREET BROOKLYN, N. Y.

\*Approved under Consolidated Freight Classification No. 6.

## CARPENTER DRUMS

*Complete Manufacturing and Distributing Organizations  
are located at*

CHICAGO, ILL.  
615 West Pershing Road  
BUFFALO, N. Y.  
1200 Niagara St.

CINCINNATI, O.  
June St. and Long Ave., Ivorydale  
PHILADELPHIA, PA.  
2150 East Huntingdon St.  
CLEVELAND, O.  
2775 Pittsburgh Ave.

ST. LOUIS, MO.  
2731 Papin St.  
BROOKLYN, N. Y.  
137-147 41st St.

portant relatively new developments is the use of acid proof brick and cement for the construction of large tanks for the storage and processing of acids and chemicals. These tanks can be made in sizes up to 50,000 gallons, and often larger.

It is exceedingly important that the user of stoneware understand its limitations.

#### Where Not to Use

Where the equipment is subject to severe shock or excessive strain, stoneware should not be used. Nor should it be used where the equipment is subject to sudden temperature changes. If these facts are borne in mind, and if the manufacturer of stoneware is consulted as to the conditions under which the apparatus will be used, acid proof stoneware can provide a highly satisfactory material for the construction of many types of chemical industry equipment.

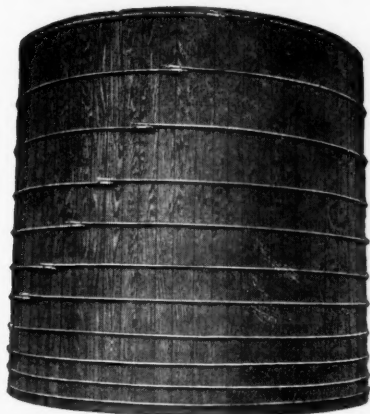
Virginia Polytechnic Institute, Blacksburg, Va., approves budget for new group of buildings, including extensions to chemistry and chemical laboratory building, to cost about \$100,000.

Pittsburgh Plate Glass Co., Pittsburgh, will erect addition to its sheet glass plant, consisting of several structures to cost over \$850,000.

Corning Glass Works, Inc., Corning, N. Y., approves plans for extensions and improvements, including new one-story unit, to cost over \$75,000.

## ECONOMY and SERVICE ATLANTIC WOOD TANKS

are used in the largest  
Chemical Plants in America



CATALOGUE AND PRICES UPON REQUEST

### ATLANTIC TANK CORPORATION

237 Tonnele Ave., North Bergen, N. J.

Established 1853

## New Plant Construction

Canadian Industries, Ltd., in which E. I. du Pont de Nemours & Co. owns 46 per cent stock interest, starts erection of new plants for manufacture of industrial and fertilizer chemicals, at Copper Cliff for production of sulphuric acid and niter cake and at Beloit, Que., and Hamilton for manufacture of phosphatic fertilizer, super-phosphate and mixed fertilizers, and near Winnipeg for explosives.

Mellon Institute of Industrial Research, Pittsburgh, Pa., announces building plans to increase facilities for all its research activities, including space for more fellowships, larger laboratories and a larger library, embodying newest ideas in design and equipment.

Ethane Carbon Co. plans construction of carbon black plant in Big Lake field, Texas. Company will burn residue gas from casing head gasoline plants. Initial consumption will be 1,000,000 cubic feet residue gas daily.

Solvay Process Co. plans extensive increase in alkali production at Syracuse plant, constructing new pipe line to cost about \$1,250,000 from salt wells near Tully, N. Y.

Standard Oil Co. of N. J. contracts for design and construction of first section of research laboratory complete with equipment at Bayway refinery, Linden, N. J.

Victor G. Bloede & Co., Baltimore, manufacturer of chemical products, considers plans for two-story brick addition to plant, to cost over \$100,000.

Southern Acid & Sulphur Co., Inc., St. Louis, Mo., approves plans for acid manufacturing plant at Beaumont, Texas, to cost over \$65,000.

Lucidol Corp., Buffalo, N. Y., manufacturer of chemical specialties, flour bleaching and maturing compounds, plans new, two-story branch plant at Fort Erie, Ont., to cost over \$65,000.

United Carbon Co., Charleston, W. Va., constructs new testing laboratory, costing about \$40,000, and to be augmented shortly by small control laboratories in Louisiana and Texas.

Wood Chemical Products Co., Little Rock, Ark., plans early erection new local plant for manufacture of chemical specialties and by-products from wood waste, to cost about \$45,000.

Carbon Products Co., Ltd., will erect a \$250,000 factory in Los Angeles, with capacity of 30,000 pounds of carbon, carbon black and lampblack daily.

Pearsall Fertilizer Co., Wilmington, N. C., plans to rebuild portion of plant recently destroyed by fire with loss estimated at \$15,000.

Hillyard Chemical Co., St. Joseph, Mo., plans new two-story plant unit costing over \$90,000, to house storage and distributing service and offices.

Tennessee Eastman Corp., Kingsport, Tenn., adds new unit to Kingsport plant, costing \$200,000.

Philadelphia Quartz Co. purchases land at South Gate, Cal., to begin erection of plant late this year.

Davison Chemical Co., Baltimore, Md., plans two-story addition to its plant, to cost about \$200,000, including machinery.

Atmospheric Nitrogen Co. is enlarging its ammonia plant, Hopewell, Va., 100 per cent, and nitrogen plant 50 per cent.



## Will You Be Ready to "Beat the Gun"?

When better business comes riding along with its call for peak production, will you be ready to get the jump on the field and step your plant right up to new production levels? Or will you wish that you had decided earlier to put in the new equipment that you hesitated about on account of the overworked "hard times" cry?

Forward-looking manufacturers realize that the present period is a particularly opportune time for carrying out any plant improvements or expansion. Today, improvements and changes can be made in a planned, orderly way, without undue interference with production schedules. And some of the largest corporations in the country are taking advantage of the situation.

They are making plant improvements now because they want to avoid the expensive production losses which even a "rush" job, done later, would mean. They are making improvements now because they want their plants to be ready to handle any situation smoothly when production demands swing upwards to new heights.

Call in a Dorr Engineer today. Let him go over your present production methods and equipment, particularly where it ties in with any wet-material handling steps. Our nearest office is at your service—without obligation, of course.

*Agitators  
Classifiers  
Thickeners  
Washers  
Sand Washers  
Slurry Mixers  
Sizers  
Filters  
Clarifiers  
Screens  
Detritors  
Digesters  
Pumps*



DENVER, COLO.  
1009 17th Street  
CHICAGO, ILL.  
333 North Michigan Avenue  
LOS ANGELES, CAL.  
108 West 6th Street  
WILKES BARRE, PA.  
Miners Bank Building  
ATLANTA, GA.  
1503 Candler Building  
TORONTO, ONT.  
330 Bay St.

## THE DORR COMPANY ENGINEERS

247 PARK AVENUE NEW YORK CITY

INVESTIGATION TESTS DESIGN EQUIPMENT

MELBOURNE, AUSTRALIA  
Crossle & Duff Pty., Ltd., 360 Collins Street

TOKYO, JAPAN  
Andrews & George Co., Inc., Central P. O. Box F-23

LONDON  
The Dorr Company, Ltd.  
Abford House, Wilton Rd.,  
S. W. 1

BERLIN  
Dorr Gesellschaft m. b. H.  
Kielgasse, 1 W. 62.

PARIS  
Societe Dorr et Cie  
26 Rue de la Pepiniere

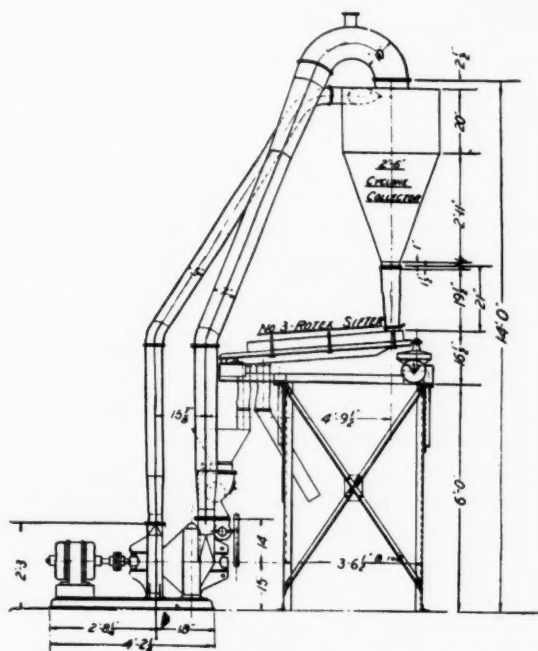
JOHANNESBURG, S. A.  
E. L. Bateman  
Locarno House.

Dry or Moist  
Fine or Coarse

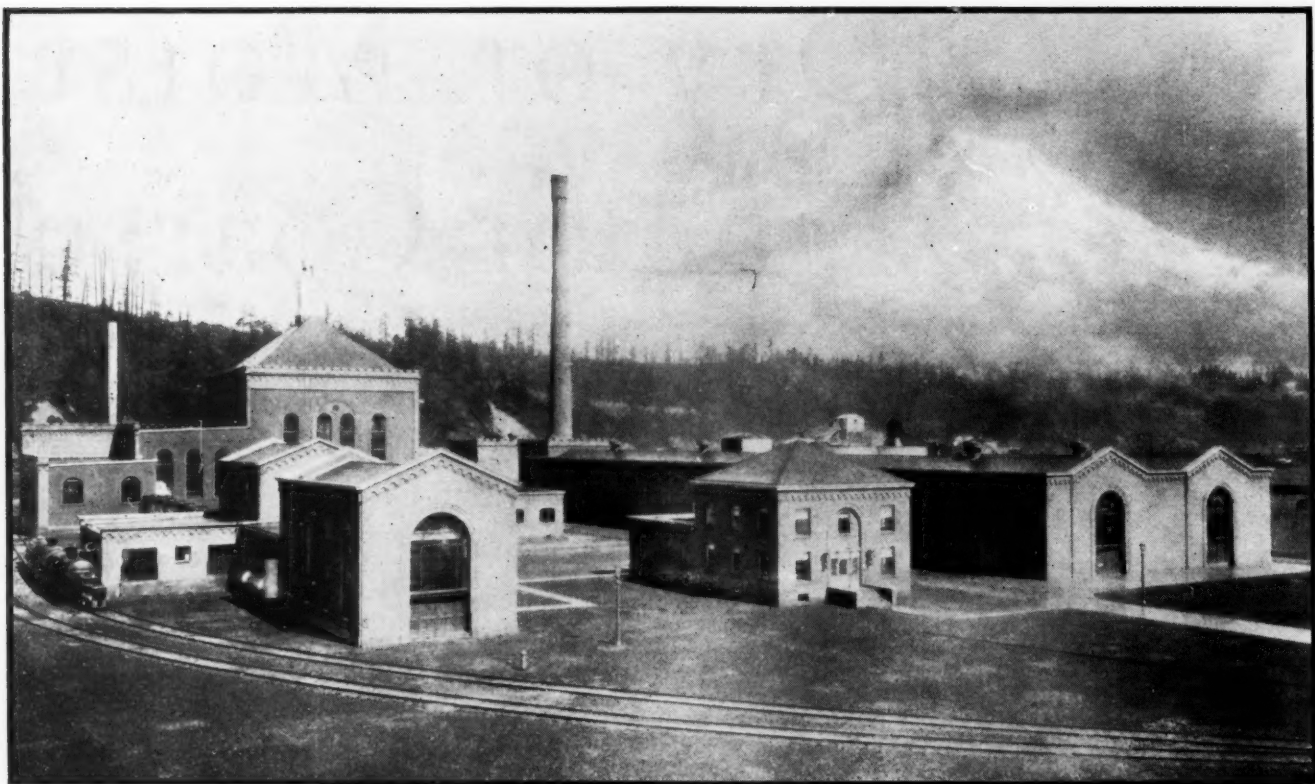
N. Y. Manager, Raymond Bros. Impact Pulverizer Co.

Two different types of equipment may apparently produce products of the same size; that is, they will both test the same on the same screen. But it will usually be found that one material contains a higher percentage of impalpable powder than the other, making it more or less desirable for certain purposes. The terms, "100-mesh," "200-mesh," etc., are generally used rather loosely. When it is specified that a product must be pulverized and separated to 200-mesh, often an absolutely 200-mesh product (i. e., a product testing 100 per cent through 200-mesh) is not required, but a product—99, 95 or 90 per cent through a 200-mesh will suffice. There is all the difference in the world between results obtained on pulverizing and separating equipment when producing a product 100 per cent through a 200-mesh screen and 90, 95 or even 99 per cent through the same screen.

When grinding a certain grade of barium sulfate (barytes) to various finenesses, the capacity drops very rapidly and the power per ton goes up very rapidly as the fineness approaches 100 per cent through a 200-mesh screen. The cost of grinding thus mounts very rapidly with the rise in fineness of the finished product. It is, therefore, essential for economical operation, to determine the exact fineness required and not to grind or separate any finer. The exact fineness should be stated in terms of a definite percentage passing through a certain sized screen; such as, let us say, 95 per cent through a 200-mesh screen—at the same time pointing out through what sized screen the five per cent remaining should all pass. This is essential since different types of equipment have different grinding and separating characteristics, so that we may obtain products all testing 95 per cent through 200-mesh, but some of those products will test practically all through an 80-mesh screen while others will show a residue left on a 50-mesh screen. It is these coarser particles which might prove objectionable for the process in which the material is used.



## Chemical Markets



*New Austin-built plant of Hooker Electrochemical Company at Tacoma, Wash.*

## Modern Plants Pay Dividends

**N**EW processes...new methods...new products...these are constantly crowding out the old order of things in the chemical industries. Obsolete practices must go if profits instead of losses are to be entered on the books. Up-to-date plants, designed to meet the production requirements of today, must replace those which might have been "good enough" a few years ago.

Long experience in designing and building for the chemical industries has made Austin, international engineers and builders, the selection of many prominent companies when new plants and warehouses were to be designed and constructed. Projects for E. I. du Pont de Nemours, U. S. Industrial Alcohol, Grasselli Chemical, National Aniline, American Cellulose and Hooker Electrochemical are numbered among recent Austin contracts.

To those who demand efficient layout, possibly for straight line production methods...

to those who insist that their new plants be the "last word" in operating speed and economy...Austin offers a service that can provide these essentials quickly and economically.

An unusual plan, known as the Austin Method of Undivided Responsibility, relieves you of the burdensome details of your project. From preliminary layout to the completed plant, a single contract covers all. Austin becomes responsible for design, construction and building equipment...guarantees total cost, quality of workmanship and materials, as well as definite completion date to be covered by bonus and penalty clause if desired.

Approximate costs and helpful building data will gladly be furnished by Austin engineers. Wire, phone, write the nearest office, or use the convenient memo below.

## THE AUSTIN COMPANY

*Engineers and Builders • Cleveland*



New York Chicago Philadelphia Newark Detroit Cincinnati Pittsburgh St. Louis Seattle  
Portland Phoenix The Austin Company of California Ltd.: Los Angeles, Oakland and San Francisco  
The Austin Company of Texas: Dallas The Austin Company of Canada, Limited



Memo to The Austin Company, Cleveland— We are interested in a..... project containing.....sq.ft. Send me a personal copy of

☐ "The Austin Book of Buildings". Individual.....Firm.....City..... CM-6-30

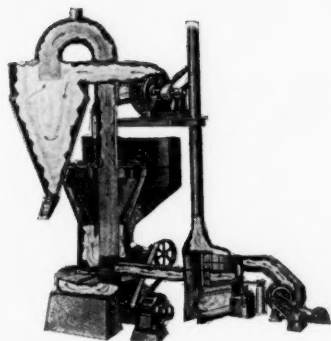


Fig. 2. Air-separating mill which can both pulverize and dry

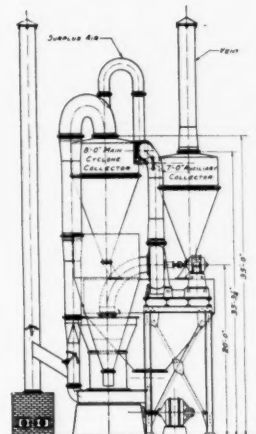


Fig. 3. Grinding equipment with flue gas generator for introducing inert gas to prevent explosion

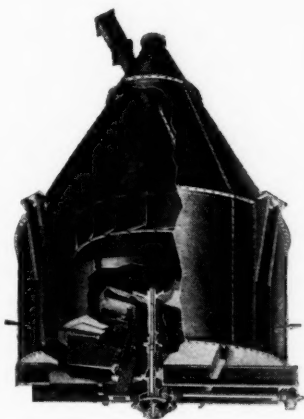


Fig. 4. Mechanical separator which divides product into two grades of fineness

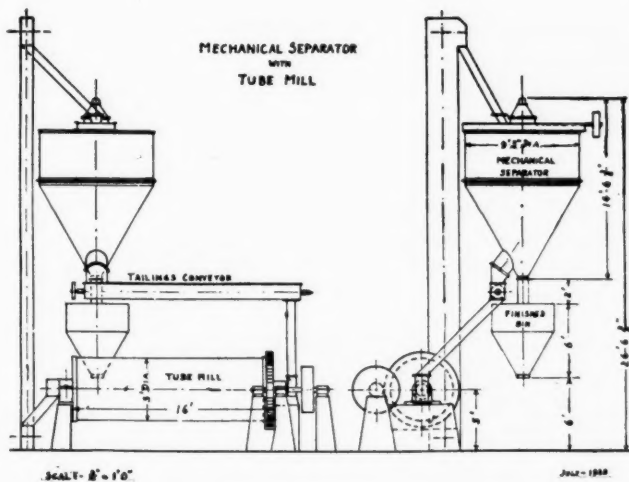


Fig. 5. Front and end view of mechanical separator connected to a tube or ball mill

It is often also important to determine the fineness of the impalpable powder which a product contains. The finest screen obtainable merely indicates that the material passing through it is smaller than the screen opening, but it gives no idea as to just how small these particles are. Here a great deal may be learned by microscopic examination. This will give an indication not only of the average particle size but as to its shape and general appearance, which is of great importance in many chemical processes.

A pulverized and separated material may be of the proper fineness as far as particle size is concerned, may have the proper particle shape but still be undesirable because it does not possess the necessary fluffiness. This term refers to the apparent gravity of the pulverized material. High fluffiness means comparatively low apparent gravity and a low fluffiness, high apparent gravity. The finer a material is pulverized the lower becomes the apparent gravity.

### The Beater Mill

Low apparent gravity is of great advantage when the powder is to be sprayed, as in calcium arsenate for spraying. The agricultural departments of the various states usually recommend that calcium arsenate be pulverized so that one pound of the powder shall occupy at least from 85 to 100 cubic inches.

The type of equipment best suited for grinding calcium arsenate or similar material is a high speed beater mill equipped with air separation. This type of equipment tends to reduce the particle size without any undue pressure; and the air-separation system disperses the particles so that each particle becomes surrounded with a film of air, held by absorption very tenaciously, on many materials so that it remains fluffy nearly indefinitely.

Fineness	Cubic Inches to the Pound	
	Column 1	Column 2
85% —200-mesh.....	81	70
90% —200- ".....	84	75
95% —200- ".....	88	80
97% —200- ".....	94	83
99% —200- ".....	100	86
99.9% —200- ".....	108	89
99.9% —250- ".....	120	92
99.9% —300- ".....	135	99
99.9% —325- ".....	145	105

Column No. 1 indicates the apparent gravity of calcium arsenate when ground on a beater mill with air-separation to various finenesses; and Column 2 shows the apparent gravity of the same material to the same finenesses when ground on a different type of pulverizer without air-separation.

In general, when a product is required testing 95 per cent through 60-mesh, it is immaterial how much fines the minus 60-mesh material contains; that is, how much 100-mesh, 200-mesh, 300-mesh or finer particles the material contains. In fact, the more powder produced, the better. On the other hand, a product is often required which shall test nearly 100 per cent through a certain sized screen and, at the same time, should test nearly 100 per cent on another screen with a smaller opening. For example: when producing a certain grade of citric acid, it is necessary to produce a product such that 98 per cent shall pass through a 20-mesh screen and only 10 per cent shall pass through a 200-mesh screen; that is,



Successor to

Kay Laboratories, Inc.  
of West Haverstraw, N. Y.

and

Fries & Fries Company  
of Cincinnati, Ohio

WISH TO ANNOUNCE •• that they are now manufacturing at their Cincinnati plant the following AROMATIC and SOLVENT CHEMICALS for the Plastics, Lacquer, Perfume, Soap, Synthetics, and other trades.

DIBUTYL PHTHALATE  
DIETHYL PHTHALATE  
DIMETHYL PHTHALATE  
DIBUTYL TARTRATE  
ALPHA AMYL CINNAMIC  
ALDEHYDE  
AMYL PHENYL ACETATE  
BENZYL ACETATE  
BENZYL ALCOHOL

BENZYL BENZOATE  
BUTYL PHENYL ACETATE  
ETHYL BENZOATE  
ACETOPHENONE  
BENZOPHENONE  
ETHYL PHENYL ACETATE  
METHYL ACETOPHENONE  
METHYL PHENYL  
ACETATE

ETHYL BETA NAPHTHOL  
ETHER (NEROLIN)  
PHENYL ACETIC ACID  
METHYL BETA NAPHTHOL  
ETHER (YARA YARA)  
GERANIOL  
RHODINOL  
CITRONELLOL  
OENANTHIC ETHER

Address inquiries on Aromatic and Solvent Chemicals to

*Sole Selling Agents:—*

American-British Chemical Supplies, Inc.

16 East 34th Street, New York City

Telephone Ashland 2265

Cable Address—Bisulphide, New York

The business of KAY LABORATORIES, INCORPORATED is being continued at the West Haverstraw, N. Y. plant, where they are producing ALDEHOL (Alcohol Denaturant), PENETROL (Agricultural Insecticide), as well as a line of Industrial Fumigants.

*Address inquiries on Insecticides to*

Insecticide Division, 578 Madison Avenue, N. Y. C., Tel. Wickersham 8115

**KAY-FRIES CHEMICALS INC.**

**16 EAST 34th ST., NEW YORK CITY**

WEST HAVERSTRAW, N. Y.

TELEPHONE—ASHLAND 2265

CINCINNATI, OHIO

there shall be only 2 per cent remaining on a 20-mesh but 90 per cent remaining on a 200-mesh.

The production of a granular product, as this kind of a product is known, can not be done on any single type of equipment in one operation. If a pulverizer is adjusted so that the product discharged tests 98 per cent through a 20-mesh, it will produce at least 20, 30 or 40 per cent of minus 200-mesh material. The softer the material the higher will be the percentage of powder. For best results the material is passed through a pulverizer so that it will be much coarser than required, say 40 or 50 per cent through a 20-mesh, instead of the 98 per cent required. This does not produce an excessive amount of fines. This coarse product is next passed over a sifter of suitable size and the plus 20-mesh material removed, which can be returned to the pulverizer for further reduction. We thus obtain a product practically all through a 20-mesh screen with a comparatively small percentage of minus 200-mesh particles.

Figure 1 indicates an air-separation pulverizer equipped so that it may be operated to produce a fine product or a granular product. The material enters the pulverizer from a hopper by means of an automatic feed, from which the pulverized material is removed by an exhauster and blown up to a cyclone collector which discharges the material on to a sifter. The oversize or, as in the above case, the plus 20-mesh material, drops directly back to the feed hopper while the granular product drops from the sifter to the finished product containers. The operation is thus automatic and the only handling of material required is to see that the hopper is kept filled with raw material and the filled containers removed.

#### Additional Separation by Sifting

It often happens that a material is so soft that, in spite of all precautions, it will break up into a comparatively high percentage of powder. Under these conditions, it is not only necessary to remove the tailings but also to sift out the powder. In the installation shown in Figure 2, the sifter can be equipped with two screens, one to remove the oversize and the other to remove the impalpable powder. This powder is generally sold as a different grade of material or else it is returned and worked over again in the process which produces the original material.

TABLE NO. 2

Mesh	Per Cent Cumulative Weight	
	Column 1	Column 2
On 20.....	1.7	1.9
" 30.....	31.3	5.1
" 40.....	42.5	7.2
" 50.....	52.2	10.6
" 60.....	73.4	15.4
" 100.....	81.8	25.5
" 200.....	90.1	49.9
Through 200.....	9.9	50.1

Illustrating the different kinds of products produced by operating a pulverizer with and without an external sifter. Column 1 gives the results obtained on the pulverizer when equipped with a sifter. The material as it left the pulverizer before entering the sifter, tested 40 per cent on a 20-mesh. The sifter removed nearly all of the plus 20-mesh material and delivered a finished product testing 98.3 per cent through a 20-mesh screen but only about 10 per cent through a 200-mesh screen. The results shown in Column 2 were obtained by using the same pulverizer (Figure 2) but without the sifter. The pulverizer was adjusted to give a product about 20-mesh in fineness. By comparing the two columns, we can see that, although both products test about 98 per cent through a 20-mesh screen, the per cent in Column 1 contains more granular particles with a smaller amount of powder, while the product shown in Column 2 contains over fifty per cent of minus 200-mesh material.

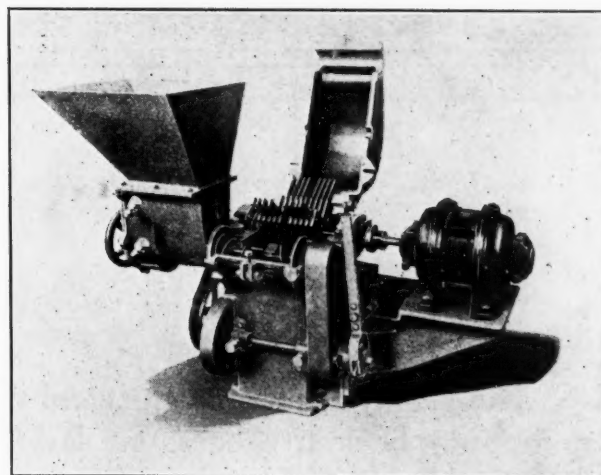


Fig. 6. Compact, dust-tight pulverizer for grinding chemicals or dyes. It is easy to clean

The combination of an air-separating pulverizer followed by external screening has lately come into general use for the production of granular products. This applies particularly to the grinding of the various resins and bakelite moulding compounds.

It is of vital importance to know the fineness when referring to particle size before proper pulverizing and separating equipment can be selected. Often the manufacturer of equipment will be unjustly blamed for the character of pulverized material produced because he was not given, in the first place, the exact physical characteristics of the material to be produced.

The moisture content of a material bears directly on the results obtained, as regards not only capacity obtained but also the nature of the finished product. Some materials with considerable moisture can be pulverized without a material reduction in their capacity.

An air-separating mill has recently been developed, which performs the function of drying the material while it is being pulverized. This mill, illustrated in Figure 4, is of either the roller or beater type, connected to a supply of hot gases, which enter the air-separating system and remove the moisture while the material is being pulverized and conveyed to the stock bins.

Because the material is in a finely divided condition, each particle surrounded by hot gases, the moisture is given off very rapidly. It is surprisingly efficient, particularly when it is necessary to obtain material nearly bone-dry. The ordinary type of dryer has no difficulty in removing moisture down to two or even one per cent, but for every tenth of a per cent of moisture removed below one per cent, the efficiency of the extraneous dryer drops very rapidly. For example: it is very difficult to dry a filter-press cake to nearly bone-dryness unless it is kept in the dryer a considerable length of time. If it is attempted to accelerate the drying by employing a high temperature, the outer surface of the cake becomes hard and



# *Pure...* **PHTHALIC ANHYDRIDE**

**FLAKED or CRYSTAL**

The quality of your product and the efficiency of your process are largely determined by the quality of the raw materials you use.

For over twelve years **Selden Brand** PURE PHTHALIC ANHYDRIDE has been the standard for uniformity and purity, being absolutely free from all odor, color and other impurities of any kind.

Safeguard your product and increase your profits by specifying **Selden Brand** PHTHALIC ANHYDRIDE.

Available in any quantity from a barrel to a carload.

*The flaked is packed in barrels weighing 250 pounds net and the Crystals, 150 pounds net. All barrels are paper lined.*

## *For Use In*

Anthranilic Acid  
Anthraquinone  
Benzoic Acid  
Bromofluoresceic Acid  
Diamyl Phthalate  
Dibutyl Phthalate  
Diethyl Phthalate  
Eosine  
Erythrosine  
Fluorescein  
Phenolphthalein  
Phthalimide  
Tetrachlor Phthalic Acid



# THE SELDEN COMPANY

Sales Division  
286 Spring Street  
New York, N. Y.

dry and still leaves wet core inside. Such material, when dried in this mill can be dried in a fraction of the usual time, since the grinding action of the mill breaks the cake down to a powder, exposing an enormous surface to the hot gases.

This mill is applicable to practically all materials not so wet as to be in a mechanical condition unfit for feeding from a stock bin. When the product is in such condition, it is advisable partially to dry the material in an extraneous dryer, down to say 2 or 3 per cent, to which point the ordinary dryer is comparatively efficient, and then feed the discharge of the dryer into the air-separating mill for the final grinding and drying.

### Utilizing Waste Heat

In many plants waste heat can be utilized from existing furnaces or kilns with practically no fuel cost. Where waste heat is not available, steam can be utilized in an air-heater for heating air and the hot air introduced into the mill for drying as well as for separating.

The air-separating mill derives its heat from a specially built oil burning furnace as shown in the illustration (Figure 2). This furnace can be of the direct or indirect type. The direct type is applicable when it is desirable to pulverize and dry material which is not injured by coming in contact with flue gases. The indirect type avoids this by heating incoming air to any desired temperature and introducing the hot air direct to the mill. It is often possible not only to dry, but to also calcine certain materials while being pulverized, separated, and conveyed. Many materials which give off their water of combination at a not too high temperature can have the combined water removed while being pulverized. It is also possible to use the air-separating system both as a calciner and a conveyor without using the grinding equipment at all.

It is sometimes necessary to calcine or dry a material already in a powdered form where the ordinary type of dryer is objectionable on account of the dusty nature of the material. The same system as shown in Figure 2 is used, except that the grinding parts are eliminated. The reverse of the above operation is possible. Under certain conditions, when handling some materials, a similar system is employed for hydrating the material; that is, making it take up water of combination. Instead of hot gases, steam or a water spray system is introduced to the closed circuit of the air-separator, and the pulverized particles, under certain conditions, take up the necessary water to form one of the hydrates of the material employed. An interesting case recently developed is in the manufacture of chlorine bleach. A system, similar to the air-separating mill was used, for disintegrating and conveying the soda ash mixture. A solution of sodium hypochloride was sprayed into the air conveying system which was taken up by the raw mixture while being conveyed by the air-separating system and, by the time it was discharged

as a finished product, the soda ash mixture had taken up the proper amount of hypochloride. This system is more efficient than the ordinary method. The ingredients are very disagreeable to handle and great precautions must be taken when these materials are mixed in an ordinary mixture. When the kiln-mill system is used, the operation is dustless.

The discussion so far has centered on the handling of a uniform material, which did not contain impurities to be eliminated while being pulverized and separated.

Let us now consider calcium hydrate made from calcium oxide or caustic lime. If the calcium oxide is not made from a pure calcium carbonate and calcined in the ordinary way, it will contain many refractory impurities, such as calcium carbonate, silica, iron and alumina oxides and over-calcined calcium oxide. To obtain a nearly pure calcium hydrate, it is necessary to eliminate these impurities. The equipment generally used for this purpose consists of an air-separating system fitted with beaters for breaking up the lumps of raw material so as to expose all of the particles to the air current. The fine hydrate is carried up and deposited in a bin above a bagging system, while the impurities are eliminated through the automatic throwout as tailings. In Table No. 3 we indicate the results obtained on this type of equipment when used to purify calcium hydrate:

TABLE NO. 3  
Purification of Hydrated Lime

	Per Cent
<i>Analyses of Lime after Hydrating:</i>	
Calcium Hydrate.....	88.95
Silica.....	3.16
Iron and Alumina Oxides.....	2.26
Calcium Oxide.....	3.00
Calcium Carbonate.....	2.63
<i>Analyses of Finished Hydrate from Air-Separator:</i>	
Calcium Hydrate.....	98.80
Silica.....	0.15
Iron and Alumina Oxides.....	0.12
Calcium Oxide.....	0.67
Calcium Carbonate.....	0.26
<i>Analyses of Tailings Discharged from Air-Separator:</i>	
Calcium Hydrate.....	5.12
Silica.....	28.61
Iron and Alumina Oxides.....	20.42
Calcium Oxides.....	22.70
Calcium Carbonate.....	23.15

Note that the calcium hydrate, before concentration, as it comes from the hydrator, contains about 89 per cent of calcium hydrate and about 11 per cent of impurities. After passing through the air-separating system the amount of calcium hydrate is raised to nearly 99 per cent and the impurities reduced to about 1.25 per cent. The tailings contain most of the impurities, which run nearly as high as 95 per cent.

This equipment is particularly applicable to pulverize an aggregate containing ingredients having different grinding characteristics, soft and comparatively hard. The beater part in the above equipment will pulverize the softer ingredient, which is carried off by the air, and the harder part is reduced more or less to a granular state and, being too large for handling by the air current, is eliminated through the automatic throwout.

TABLE NO. 4

Fineness of Lead Oxide	Grams per Cubic Inch	Per Cent Lead remaining in Lead Oxide
99.5% —200-mesh.....	40.5	0.39
99.9% —200- ".....	32.3	0.12
99.9% —300- ".....	27.1	0.072
99.9% —325- ".....	23.4	0.035
99.99% —325- ".....	20.2	0.016
Under 10-microns.....	17.5	0.012

Illustrating the results obtained when pulverizing a lead oxide containing free metallic lead.

# *Announcing*

*Another NATIONAL product for the*  
**CHEMICAL INDUSTRY**



## **NATIONAL TOXILIC (MALEIC) ACID**



National Toxilic (Maleic) Acid is advantageously used in esters, plasticizers, lacquer solvents, and synthetic resins.

We are glad to supply information and samples on request.



Intermediates Division

**NATIONAL ANILINE & CHEMICAL CO., Inc.**

40 Rector Street

New York, N. Y.

The lead oxide, when fed to the pulverizer, is reduced to a powder and carried off by the air current and most of the metallic lead eliminated. It will be seen that the finer the lead oxide is reduced the more metallic lead is eliminated and the less lead remains in the pulverized oxide. The apparent gravity also decreases with an increase in fineness. Litharge and many of the various lead oxides are usually graded as to their apparent gravity. Thus, when the term, "30-gram litharge" is used it means that one cubic inch of the litharge weighs 30 grams. When a certain process is used in the manufacture of lead arsenate, it is necessary for the oxide to be dispersed in the reagent used and to remain in suspension until the chemical reaction is completed. A light gravity oxide is essential for this process, since a heavy gravity litharge would settle out and sink to the bottom before the reaction is complete.

### When Materials Tend to Explode

In grinding or separating certain hazards may be encountered when handling chemicals or raw materials. Some materials tend to ignite or explode when being pulverized, among them sulfur, starch and many colors or dyes. Such materials may be handled in an inert atmosphere. Formerly the air-separating system was saturated with pure carbon-dioxide, which, however, proved too expensive. A system was finally developed of introducing flue gases into the pulverizing and air-separating equipment. This is merely an adaptation of the air-separation system for drying—the only difference being that the flue gases are cooled and sometimes scrubbed before entering the equipment. The grinding equipment and flue gas generator are shown in Figure 3. The flue gas generator consists essentially of a furnace in which is burned coal, coke, gas or oil, and the products of combustion, consisting of the inert carbon-dioxide and nitrogen are introduced into the air system of the pulverizer, regulated by means of proper recorders. Different materials require different concentrations of inert gas to prevent explosions. In general, we may say that when the air-separating system contains 8 per cent of inert gas, the liability for the material to ignite or explode is practically eliminated.

### An Adaptable Separator

Recent developments have produced a mechanical separator which is used extraneous to an air-separating mill and in open or closed circuit with nearly any type of pulverizing equipment. The mechanical separator really takes the place of screens, sifters or bolting reels, for a product finer than can be economically produced by screening. It is often desirable to remove the powder from materials already powdered and requiring no grinding. For example: a raw material may test 60 per cent through a 200-mesh screen but a practically 200-mesh product is required. The material is fed to the mechanical separator, which does no grinding but removes the 200-mesh material

and automatically throws out as tailings the plus 200-mesh.

Figure 4 shows a mechanical separator of this type. The raw material is fed at the top. The fines are separated from the coarse and drop out through two different spouts at the bottom of the separator.

The great advantage of the mechanical separator is that it can increase the capacity and thus the efficiency of any existing type of grinder. Let us take the case of the ordinary type of tube mill grinding a rather refractory material to a fineness of say 90 per cent through a 200-mesh screen. Formerly the tube mill was adjusted to deliver this type of product at the discharge end, but at the expense of capacity. It has been found much more efficient to have the tube mill adjusted not to finish in the mill but to grind coarser than required—say 60 per cent, 50 per cent or even a lower percentage through a 200-mesh screen instead of the required 90 per cent. This coarsely ground product then goes to a mechanical separator which removes a product 90 per cent through 200-mesh, and the tailings from the mechanical separator are returned to the tube mill. A tube mill with a mechanical separator in this system of closed circuit grinding would more often have its capacity doubled than when alone producing a finished product. Other materials are also better handled in this manner than when completed in one operation in a pulverizer. A material which tends to heat, if kept too long in a pulverizer, has an opportunity to cool off when passed to an external air-separator.

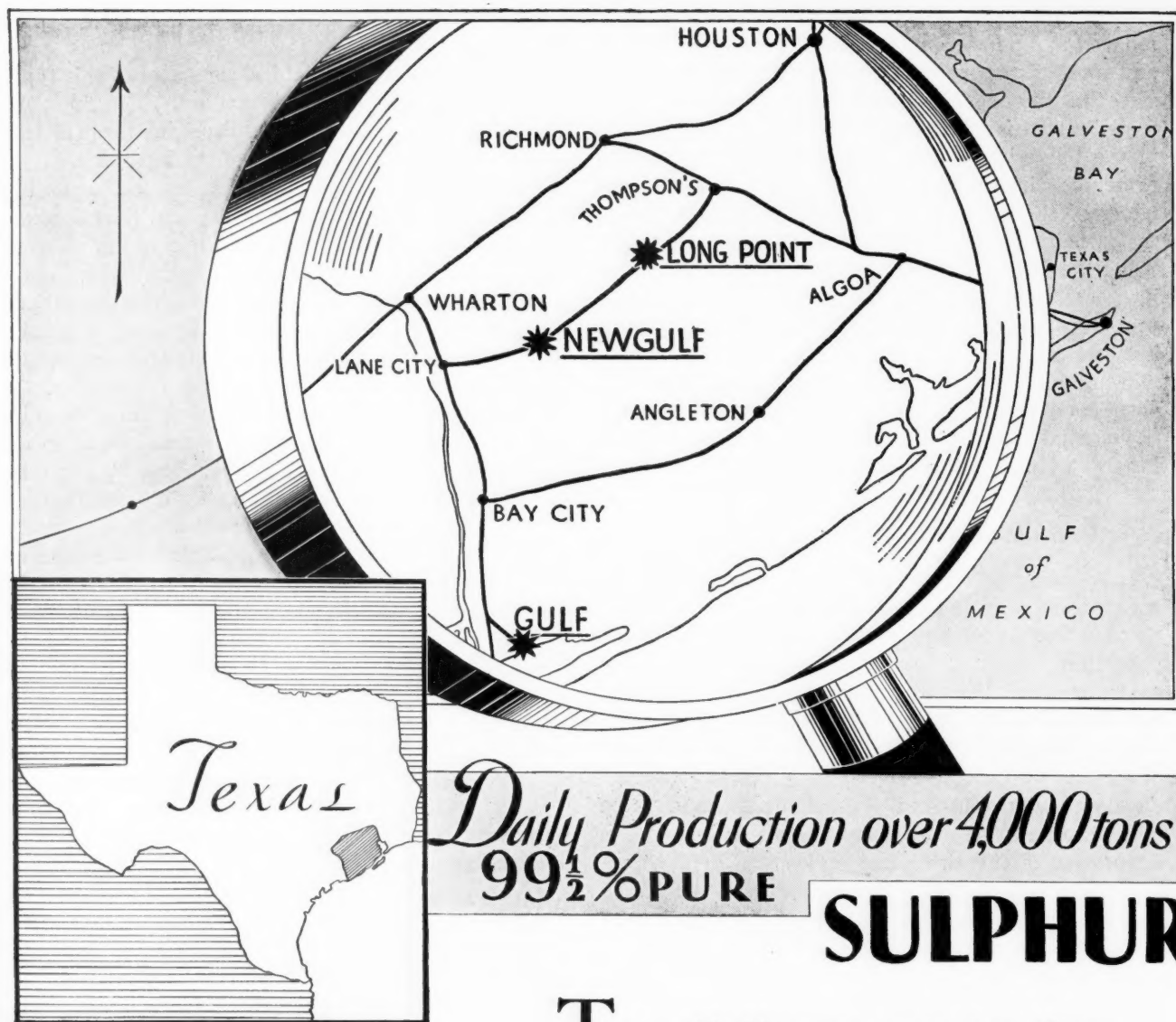
Figure 5 indicates how a mechanical separator is connected to a tube or ball mill. A front view and an end view are shown. The mill discharges into the booth of an elevator which elevates the material to the mechanical separator—the separator removes the necessary fines which drop into a "finished product bin"; the tailings drop into a screw conveyor and are conveyed back to the feed end of the tube mill.

### Greater Cleanliness Possible

The latest refinements in pulverizing and separating equipment stress more and more cleanliness in grinding and accessibility to grinding parts whenever it is necessary to change materials or make replacements.

Because air-separation is entering more and more into the field of grinding, it is possible to obtain more dustless operation than formerly, when bolting was customary for obtaining fineness, and mechanical conveyors and elevators were used for transporting.

Pulverizing machinery is now built with the grinding parts accessible for replacement or for cleaning. This is of particular advantage when changing from one chemical to another or when grinding various colored dyes. Figure 6 shows a compact and dust-tight pulverizer, recently developed, for grinding chemicals or dyes. It will be noted that it can be split open so that all the parts can be cleaned or washed out, if necessary, when changing materials.



Texas produces nearly 90% of the world's sulphur requirements from a relatively small area lying along the Gulf Coast.

*Daily Production over 4,000 tons*  
**99½% PURE**  
**SULPHUR**

Texas Gulf now operates three deposits one at Gulf, Newgulf and Long Point. Production from these exceeds 4000 gross tons daily. With the huge reserves of these mines, industries may rely upon the Texas Gulf Sulphur Company as a dependable source of sulphur.

**TEXAS GULF SULPHUR CO.**  
 75 E. 45<sup>th</sup> Street New York City  
 Mines: Gulf and Newgulf, Texas

# Chemical Facts and Figures

## Rossville and General Industrial Merge with American Solvents

**H. I. Pepper is Chairman of Board and V. M. O'Shaughnessy, President, of Merged Organization—Total Estimated Earnings of Three Companies in 1929 Amounted to \$2,285,000—Merger Completed on Exchange of Shares Basis.**

American Solvents & Chemical Corp. announces completion of arrangements for merger of its interests with those of Rossville Commercial Alcohol Corp. and General Industrial Alcohol Corp.

Under the terms of merger and reorganization, holders of Rossville Commercial Alcohol Corp.



V. M. O'Shaughnessy

\$7 convertible preferred will receive two and one-third shares of \$3 cumulative convertible preferred stock of American Solvents & Chemical Corp. for each share held. Each share of Rossville common will receive one and one-fifth shares of American Solvents common.

Holders of capital stock of General Industrial Alcohol Corp. will receive one share of American Solvents common for each share now held.

American Solvents & Chemical Corp. will assume all debts

including the debentures of Rossville and General Industrial. After the completion of the reorganization the Rossville debentures will be convertible into American Solvents common at rate of 22.4 shares for each \$1,000 bond. General Industrial debentures will be convertible into such common stock at rate of 30 shares for each \$1000 bond.

Upon completion of the merger, capital of American Solvents & Chemical Corp. will consist of \$1,737,000 6½% debentures, due 1936; \$3,096,000 6% debentures due 1949 and \$2,222,000 6½% debentures due 1944 a total of \$7,055,000 funded debt. There will be outstanding 189,166 shares of \$3 preferred out of an authorized issue of 500,000 shares and 453,290 shares of common out of an authorized issue of 1,250,000 shares of no-par.

Total earnings of the three merged companies in 1929, taking full year for American Solvents and Rossville and eight months for General Industrial, available for interest on funded debt are stated to have been \$2,285,000.

Pro-forma consolidated balance sheet of the combined companies as of March 31 shows \$6,831,000 current assets; \$13,873,000 fixed assets and \$442,000 miscellaneous assets. Current liabilities amount to \$1,729,000 funded debt \$7,055,000, and capital stock and surplus \$12,362,000.

H. I. Pepper, president American Solvents & Chemical Corp., becomes chairman of the board and V. M. O'Shaughnessy, president of Rossville Commercial Alcohol Corp. becomes president of American Solvents.

American Institute of Chemical Engineers holds first summer meeting in Detroit June 4-6, with program of technical papers on chemical engineering practice and inspection of chemical and automotive plants. Prof. A. H. White, University of Michigan, is president.

## Plans Laid for Formation of U. S. Institute for Textile Research

Textile industry representatives meet May 23 to lay plans for United States Institute for Textile Research, to conduct fundamental research for benefit of textile industry. Meeting was held under auspices of American Association of Textile Chemists and Colorists and the Textile Research Council. C. H. Clark, representing research council, was chosen secretary, to act through stages of organization. Plan is to transfer corporate structure of Textile Research Council to new United States Institute for Textile Research. Tentative plans provide for seven classes of members and sixteen representatives of as many groups of the industry. Group advocates keeping Textile Alliance fund from German reparations dyes, intact and using its income for pure research.

## Manufacturing Chemists and S.O.C.M.A. Hold Annual Meetings at Absecon

Manufacturing Chemists' Association and Synthetic Organic Chemical Manufacturers' Association hold annual meetings at Seaview Golf Club, Absecon, N. J., June 5, featured by joint annual dinner and golf tournament on following day. Dr. E. H. Killheffer, president, Newport Chemical Works, was toastmaster at dinner, which was addressed by Dr. E. B. Brossard, chairman U. S. Tariff Commission. Jasper E. Crane, chairman of the board, Du Pont Ammonia Co., spoke on "The Development of Synthetic Ammonia Industry in the United States" at Manufacturing Chemists' Association meeting.

## Williamson Bill Becomes Law

Williamson bill, transferring enforcement work of Bureau of Prohibition to Department of Justice is signed by President Hoover, May 27. There will be revision of regulations and transfer of most of employees of present Bureau of Prohibition to Department of Justice. James M. Doran, Commissioner of Prohibition for past three years, is expected to remain in charge of new Bureau of Industrial Alcohol, as his methods of handling this branch of work has proved satisfactory to both government and industry. Amendments proposing abolition of dual control of issue of permits and prevention of use of poisonous denaturants in alcohol were defeated in the Senate.

## American Cyanamid Explores Sulfur Deposits

American Cyanamid makes arrangements with Jefferson Lake Oil Co. to explore latter company's sulfur deposits under Lake Peigneur, in Iberia Parish, Louisiana. The deposit is estimated to contain 10,000,000 tons of sulfur. Cyanamid's rights were obtained under an option, during life of which it must carry out certain exploration work. If sulfur is encountered in commercial quantities, Cyanamid will exercise its option and begin operations for production on a large scale. Profits of undertaking will be shared with Jefferson Lake Oil Co.

House of Representatives passes Norris Muscle Shoals Bill, containing Reese private ownership amendment, which would turn plant over to private interests through a leasing board appointed by the president. Measure goes to conference.

# THE *EXTRA* ADVANTAGE!



**EBG** has surrounded the distribution of Liquid Chlorine with conditions that appeal to buyers seeking an extra advantage.

The first claim upon our customers' good will is the high excellence of the EBG product. Confidence is enhanced by the ideals of this organization, one practicing the old fashioned virtues of business integrity, responsibility and fair dealing.



Users of EBG Liquid Chlorine receive a service beyond that covered in a contract—an extra advantage of tangible benefit. Acquaint yourself with it!

## **ELECTRO BLEACHING GAS CO.**

**PIONEER MANUFACTURERS OF LIQUID CHLORINE**

Plant: Niagara Falls, New York Main Office: 9 E. 41st St. New York

# Liquid Chlorine

## Personal and Personnel

Robert J. Moore, for past six years general research chemist, Pratt & Lambert, Inc., Buffalo, N. Y., resigns to become development manager, varnish resin department, Bakelite Corp., Bloomfield, N. J. He is member of research committee, paint and Varnish division, American Chemical Society. The research chemists of Pratt & Lambert, Inc., tendered Mr. Moore a farewell party on May 7.

Dr. Irving Langmuir, associate director of research, General Electric Co., receives Willard Gibbs Medal of Chicago Section, American Chemical Society, May 23, as nineteenth medalist chosen for work in pure or applied chemistry. "What Are Atoms Like—How Do We Know?" was the subject of Dr. Langmuir's address.

H. L. Derby, president, Kalbfleisch Corp., and chairman tariff committee, National Association of Manufacturers, commends action of Senate in receding from position that its conferees should make no concession as to flexible tariff rule or export debenture amendment.

Herman A. Metz, is elected president, board of trade, German-American Commerce, New York. Also elected were: chairman, executive committee, Charles Ermelbauer; vice-presidents, Karl Eilers and Ernst Schmitz; secretary-treasurer, Albert Degener.

W. F. Harrington, vice-president, Jasper Crane, member of the executive committee, and other officials of E. I. du Pont de Nemours & Co. visit Niagara Falls plant of Roessler & Hasslacher Chemical Co., recently acquired by du Pont interests.

L. W. Rowell, president, National Fertilizer Association, and manager, fertilizer department, Swift & Co., Chicago, is elected a vice-president of the company. John E. Corby is elected secretary to succeed Charles A. Peacock, who recently died.

Horace Bowker, president, American Agricultural Chemical Co., and George A. Whiting, president, Standard Wholesale Phosphate & Acid Works, Inc., Baltimore, are elected directors, Baltimore Steam Packet Co.

E. A. Doyle, consulting engineer, Linde Air Products Co., connected for many years with gas manufacturing division of Union Carbide & Carbon Corp., is elected president, American Welding Society.

Ray C. Schlotterer is appointed secretary, Drug and Chemical Section, New York Board of Trade. He was formerly with the Braden Copper Co. and the American Bankers' Association.

Irene du Pont, director E. I. du Pont de Nemours & Co., is elected member executive committee, National Industrial Conference Board.

Joseph I. Culver, formerly with Dow Chemical Co., joins sales organization of Harshaw Chemical Co., Cleveland, at New York office.

George C. O'Brien becomes manager of Chicago office of naval stores department, Hercules Powder Co. Mr. O'Brien was formerly assistant sales manager at Wilmington, Del.

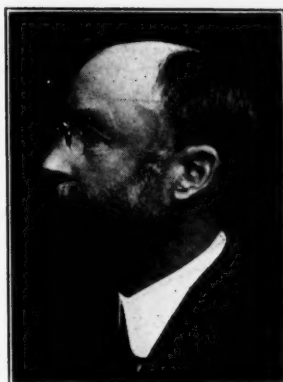
Theodore Swann, president, Swann Chemical Co., receives degree of Doctor of Science from Oglethorpe University.

J. Lucien Jones is appointed advertising manager of J. T. Baker Chemical Co., Phillipsburg, N. J.

Dr. E. C. Lathrop is elected to board of directors, Celotex Co., in recognition of his services as director of research.

## William J. Matheson, Former Head of National Aniline Dies May 15

William J. Matheson, former president, National Aniline & Chemical Co., dies May 15, aged 73. He was born at Elkhart, Wis., and educated at St. Andrews University, Scotland, which made him a doctor of laws in 1920. He began his investigations in the application of coal tar dyes in 1876.



William J. Matheson

At the time of his death he had retired from active business, but was still acting as vice-president of the Corn Products Refining Co., of which he had been chairman of the board of directors, and he was a trustee of the Bank of New York and Trust Co., and a director of the Continental Insurance Co. and the Home Life Insurance Co.

In 1927, Mr. Matheson gave funds for an international study of "sleeping sickness" by a commission of which Drs. Frederick Tilney, William Darragh and Haven Emerson were members. He had been vice-president of the Charity Organization Society.

Dr. Matheson, bequeathed more than \$600,000 for medical research, including 4,200 Corn Products Refining Co. shares, worth more than \$400,000 at present market price, to the William J. Matheson Foundation.

R. W. de Greeff dies at his home, Bromley, Kent, England, May 11, age 78. He founded R. W. Greeff & Co., Ltd., London, England, in 1880. He formerly travelled extensively in this country. He was the uncle of Robert de Greeff, head of R. W. Greeff & Co., N. Y. and father of E. M. de Greeff, now head of the London firm.

Herbert Graff Sidebottom, secretary, Chemists Club, New York section, American Chemical Society, and the Paint, Oil and Varnish Club of New York, dies May 22, aged 38. He was also a member of American Institute of Chemical Engineers. He had been connected with several chemical, paint and oil companies.

Frank B. Wiborg, founder, Ault & Wiborg Co., printing inks, dies May 12, at age of 75. At twenty-seven he formed with Levi A. Ault, who died last year, partnership for manufacturing ink. The company was merged with International Printing Ink Co. in 1928.

Hiram Le Roy Simpson, vice-president and general sales manager, United Drug Co., dies May 15, aged 53. After operating drug store for a number of years, he joined sales force of United Drug Co. in 1909, and became vice-president in 1915.

Rudolph Seldner, vice-president and treasurer, Seldner & Enequist, Inc., chemicals, Brooklyn, dies May 11, aged 58.

Reginald Lanier, superintendent, Oxygen Products Corp., Ilsley, Ky., is killed in quarry accident at Upton, Ky., May 3.

Luther G. Goodrich, treasurer, Eastern Salt Co., Boston, dies May 16, aged 53.

Lovett R. Potter, vice-president and secretary, Columbia Naval Stores Co., Savannah, Ga., dies May 16, aged 38.

W. Y. Foster, Jr., vice-president and general manager, Hope Fertilizer Co., Hope, Ark., dies May 18.

# Accept this Helpful Booklet



## Do You Use Any of these Chemicals in Your Business?

Acetate of Lead  
 Acetic Acid Commercial  
 Acetic Acid Glacial  
 Acetic Acid Pure  
 Acetic Acid Redistilled  
 Acetic Anhydride  
 Acid Phosphate  
 Alum—Ammonia U. S. P.  
 Alum—Filter  
 Alum—Paper Makers  
 Alum—Pearl  
 Alum—Potash U. S. P.  
 Alumina, Sulphate of Commercial  
 and Iron Free  
 Aluminum Chloride Crystals  
 Aluminum Chloride Solution  
 Aqua Ammonia  
 Aqua Fortis  
 Arsenate of Lead Paste  
 Arsenate of Lead Powder  
 Arsenic Acid  
 Barium Chloride  
 Battery Coppers  
 Battery Zincs  
 Bi-Sulphate of Soda  
 Bi-Sulphite of Soda Solution  
 Bordeaux Mixture Powder  
 C. P. Ammonium Hydroxide  
 C. P. Hydrochloric Acid  
 C. P. Nitric Acid  
 C. P. Sulphuric Acid  
 Cadalyte  
 Cadmium  
 Cadmium Anodes  
 Cadmium Hydrate  
 Cadmium Sulphide  
 Calcium Arsenate Powder  
 Casein Spreader  
 Chromic Acid  
 Depilatory  
 Dry Colors  
 Dust Mixtures  
 Ducean—Iron drum cleaning com-  
 pound  
 DuGro (Grasselli Plant Food)  
 Electrolyte  
 Formic Acid  
 G. B. S. Soda  
 Glauber's Salt  
 Glauber's Salt Anhydrous  
 Hypo-sulphite of Soda Crystals  
 Hypo-sulphite of Soda Granulated  
 Hypo-sulphite of Soda Pea Crystals

Iron Pyrites Ore  
 Lactic Acid  
 Lime Sulphur Solution  
 Lithopone—  
 —Gold Seal Beckton White  
 —Grasselli White  
 —Linoleum White  
 —Becktone  
 —Duolith  
 Mixed Acid  
 Mossy Zinc  
 Muriate of Tin Crystals  
 Muriate of Tin Solution  
 Muriatic Acid  
 Nitric Acid Commercial  
 Nitric Acid Fuming  
 Nogas  
 Oil Emulsion  
 Oil of Vitriol  
 Oleum  
 Phosphate of Soda  
 Sal Ammoniac  
 Salt Cake  
 Sherardizing Zinc  
 Silicate of Soda Granulated  
 Silicate of Soda Lump  
 Silicate of Soda Pulverized  
 Silicate of Soda Solid Glass  
 Silicate of Soda Solution  
 Snowflake Soldering Salts  
 Sodium Fluosilicate  
 Sodium Silico Fluoride  
 Soldering Flux Crystals  
 Soldering Flux Solution  
 Slab Zinc  
 Strontium Nitrate  
 Sulphate of Soda Anhydrous  
 Sulphate of Soda Technical  
 Sulphide of Soda Concentrated  
 Sulphide of Soda Crystals  
 Sulphide of Soda Flake  
 Sulphide of Soda Fused Solid  
 Sulphite of Soda Crystal  
 Sulphuric Acid  
 Summer Fruit Spray  
 Super Sulphate of Soda  
 Tin Crystals  
 Tinning Flux  
 Tri-Sodium Phosphate  
 Zinc Anodes  
 Zinc Chloride Fused  
 Zinc Chloride Granulated  
 Zinc Chloride Solution

### AND OTHERS

Whatever your requirements, just write, wire or  
phone our nearest office

**GRASSELLI GRADE**  
A Standard Held High for 91 Years

The Grasselli Chemical Co.  
629 Euclid Ave., Cleveland, Ohio.

Please send us, without cost or obligation, your  
booklet, "Chemicals."

Name.....

Firm.....

Address.....

City and State.....

## News of the Companies

Kansas City Whiting Co., Kansas City, Mo., begins production of precipitated calcium carbonate from lime slurry, waste product of soap manufacture, making a carload daily from waste from Procter & Gamble Co. C. T. Thompson, president, and G. M. Hayward, vice-president, Thompson-Hayward Chemical Co., are among those interested in the new enterprise.

Du Pont Cellophane Co. announces following additions to New York office force: H. J. Eiseman, packaging expert, formerly with Robert Gair Co.; F. M. Burgess, advertising department, formerly with Lay Co.

Roessler & Hasslacher Chemical Co. holds annual outing at Narragansett Inn, Lindenhurst, L. I., May 24. One hundred and sixty employees enjoyed the varied program. Milton Kutz, executive vice-president in charge of New York office, made a short address at dinner.

Rolls Chemical Co., Buffalo, chemical brokers, celebrates fifteenth anniversary in chemical field. Company represents several well known chemical manufacturers. H. J. Rolls is president and general manager.

Alex G. Fergusson Co., manufacturers' agent, and Fergusson Laboratories, Philadelphia, manufacturer of chemical specialties, move into their new building, 24 Oregon Avenue.

J. T. Baker Chemical Co. research fellowship in analytical chemistry for Midwestern section is awarded to A. C. Shead, Oklahoma University for study at University of Illinois.

Consolidated Chemical Corp., merger of Newport Chemical Works, International Printing Ink Co., and Ault & Wiborg Varnish Works, plans to include California Ink Co. before merger is completed.

Wishnick-Tumpeer, Inc., issues 24-page booklet reviewing its 1929 advertising in technical and trade press, reproducing representative ads of its products.

Mathieson Alkali Works, Niagara Falls, N. Y., takes over adjoining plant of Norton Co., abrasives manufacturers, as soon as alterations are completed.

Newport Chemical Works, Passaic, N. J., announces it will again produce Acid Anthracene Blue RXO, withdrawn some years ago.

Arkansas Bauxite Co., Little Rock, Ark., incorporates to develop bauxite holdings south of Granite Mountain, Edgar G. Hanschke, president, and John P. Evans, secretary.

Givaudan-Delawanna, Inc., New York, announces purchase of George V. Gross & Co., and removal to 80 Fifth ave., that city.

General Chemical Co. announces establishment of warehouse in Charlotte, N. C., with James J. Peyton in charge.

Swann Corp. announces change in telephone number to Lexington 2711.

United States Industrial Alcohol Co. moves to new Lincoln Building, 60 East 42nd st., New York.

Hazard Advertising Corp., counsel to several chemical concerns, moves to 295 Madison ave., New York.

N. Y. Quinine & Chemical Works, Brooklyn, appoints Allen & Withington, 78 Cortlandt st., Boston, as Boston representatives.

D. H. Litter Co., New York, moves its Philadelphia office to 600 S. Delaware ave.

## Swann Chemical Co., Formed By Consolidation of Seven Companies

Swann Corp. announces consolidation of seven subsidiaries under the name of Swann Chemical Co., with capital of \$1,000,000 and surplus of approximately \$1,400,000. Companies included in merger are: Southern Manganese Corp., manufacturer of ferro phosphorus; Southern Manganese Mining Corp.; Southern Manganese Land Co.; Federal Carbide Co., manufacturer of calcium carbide; Jax Plant Food Co., manufacturer of concentrated fertilizers; and Federal Phosphorus Co., manufacturer of phosphoric acid, sodium phosphates, ammonium phosphates, calcium phosphates, textile oils and chemicals, diphenyl and its derivatives. With exception of Federal Phosphorus Co., which is retained as sales division for phosphoric acid and phosphates, all company names will be superseded by Swann Chemical Co.



Theodore Swann

Swann Corp. had its origin in Southern Manganese Corp., founded by Theodore Swann in 1917, to make ferro-manganese by an electric furnace process. In addition to Swann Chemical Co., the Swann Corp. is holding company for Federal Abrasives Co., aluminous oxide and silicon carbide; Provident Chemical Co., St. Louis, mono calcium phosphate; Iliff-Bruff Chemical Co., Hoopeston, Ill.; and Swann Research, Inc.

Officers of Swann Chemical Co. are: Theodore Swann, president; E. L. Sayers, vice-president in charge of operations and engineering; B. G. Klugh, vice-president; John A. Chew, vice-president; Robert S. Weatherly, sales manager; C. M. Jespersen, secretary and treasurer; E. T. Hall, assistant secretary and treasurer; Alma Lide, assistant secretary and treasurer.

## Salesmen Hold First Tournament

Salesmen's Association, American Chemical Industry, holds first golf tournament of season at Canoe Brook Country Club, Summit, N. J., May 20. The prize winners were: Al Alvarez, low gross, Grasselli Chemical Co., R. H. Brewer, Liberty By-Products Co., second low gross; Ed Orem, E. I. de Pont de Nemours, third low gross; in low net division were, Class A, S. C. Moody, Calco Chemical Co., Victor E. Williams, Monsanto Chemical Works, L. Neuberg, Warner Chemical Co. In class B, Ira P. MacNair, MacNair-Dorland Co., John Powell, John Powell & Co., F. S. Dubbs, American Cyanamid Co., S. E. Swenson, American Cyanamid Co. Kickers' handicap winners were: Grant A. Dorland, J. R. Eldridge, Virginia Smelting Corp. and Eric Kunz, Givaudan-Delawanna, Inc.

Wood Chemical Institute transfers offices from Chicago to Exchange National Bank Bldg., Olean, N. Y. Executive secretary is L. T. Kniskern.

Tennessee Products Corp. is upheld in its suit against Joseph Warner for infringement of patent for improved process of manufacturing ferro-phosphorus in blast furnace.

Philadelphia Quartz Co. issues booklet on use of silicate of soda in paper manufacture.

General Aniline Works announces new color Indanthren Red Violet RHA paste fine, for cotton, rayon and linen.

International Printing Ink Corp. leases seventeenth floor in Holland Plaza Building, Hudson and Canal sts., New York.

**ALCOHOL—ALADDIN'S LAMP**



**OF MODERN DAY INDUSTRY**



## **Glorifying the Caduceus**

For more than 1900 years the Caduceus—symbol of Medicine—was submerged by the onslaughts of pestilence and ignorance, infection and prejudice. Yet it rose again as a more glorious emblem of the Victory of Medicine.

The achievements of medical Science are written in human forms and figures, freed from disease...and while the Caduceus has been the mark of arms the major weapon has been alcohol which, as an agent of medicine, might be called the great healer.

• • •

And in America the symbol of Industrial and Scientific alcohol—known wherever alcohol is used—is the one reproduced below.



**U.S. Industrial Alcohol Co.    U.S. Industrial Chemical Co., Inc.**

**110 East 42nd Street, New York City**

*Through the alphabet with Alcohol—Series C*

## Federal Abrasives Elects Crenshaw Vice-President in Charge of Sales

S. D. Crenshaw, Jr., is elected vice-president in charge of sales, Federal Abrasives Co., a Swann Corp. subsidiary manufacturing aluminum oxide and silicon carbide abrasives. Prior to 1928, when he joined the Federal organization, he was successively connected with Charlestown (S. C.) Mining & Manufacturing Co., Virginia-Carolina Chemical Corp.; Phosphate Products Corp.; and Mathieson Alkali Works, Inc. During the past year he has been sales manager, Federal Abrasives Co., having been advanced from sales staff to that position.



*S. D. Crenshaw, Jr.*

G. B. Cunningham, assistant sales manager, Federal Phosphorus Co., another Swann subsidiary, is transferred from the company's Birmingham office to its New York office, where he will direct sales of diphenyl. He has been with the company since 1928, previous to which time he was with Columbia Engineering & Manufacturing Corp., Cincinnati.

General Aniline Works receives patent covering process for manufacture of sulfur dyes, and one covering vat dyestuffs of anthracene series containing nitrogen. British Dyestuffs Corp. receives patent for process for dyeing acetate silk. Rohm & Haas receives patent for new application of vat dyes to textile fibers.

Standard Oil Co. of N. J. begins commercial production of gasoline by hydrogenation of crude petroleum, in August, at Bayway, N. J., at rate of 5,000 barrels daily. Two other plants are planned.

Du Pont Ammonia Corp., obtains patent on process for production of phosphoric acid and hydrogen. Hydrogen monoxide is made to react on phosphide of a metal, and phosphorus of latter is oxidized, setting free hydrogen gas.

Newport Chemical Works, announces new powder form of Anthrene Violet BNX Supra Special fast cotton dye, which is said to be more suitable for making dye pastes for the printing of cotton goods.

West End Chemical Co., Oakland, Cal., receives patent grant covering a method for recovering borax from brine. Brine is treated with carbonic acid gas to precipitate part of carbonates, removing latter from the solution and crystallizing out borax, by cooling.

Walker & Gooderham, & Worts, Canadian distillers, plan to enter industrial chemical field, to make industrial alcohol, carbon dioxide ice and other products, as result of banning of liquor exports to United States.

Texas Gulf Sulphur Co. produced for quarter ended March 31, 1930, 386,254 tons sulfur; Freeport Sulphur Co., 187,845 tons; Duval Texas Sulphur Co., 6,429 tons.

National Aniline & Chemical Co., Inc., describes in May "Dyestuffs" uses of National Erie Black GXOO.

Hercules Powder Co. appoints A. H. Sanford branch manager Wilmington naval stores district.

Fire destroys plant and equipment of Clawson Chemical Co., Ridgway, Pa. New two-story building is planned to replace it.

## Compania Salitrera Nacional is New Chilean Nitrate Combine

Cosana, or Compania Salitrera Nacional, the new Chilean nitrate combine, will have capital of 3,000,000,000 Chilean pesos, or about \$365,100,000, divided into 30,000,000 shares of 100 pesos each, according to the proposed law sent by the government to the Chilean congress. American, British, German and Slav interests will be shareholders in proportion to their present holdings with shares exchanged.

Shares will consist of two series: Class A, wholly owned by the government, will amount to 1,500,000,000 pesos fully paid; Class B will be issued in preferred and common shares, the preferred shares amounting to only 500,000 pesos. Class B preferred stock will bear 7% interest on nominal value, while all of Class A stock will be considered as common stock. Company will be administered by board of directors consisting of 12 members, four of whom will be appointed by President of Chile representing Class A stock for period of six years. Seven directors will be appointed by Class B stockholders and one by Class B preferred stockholders, all for one year. At least 80% of employees of company will be Chilean citizens. Government, in exchange for the Class A stock will deliver to Cosana in accordance with needs of the company, nitrate properties estimated to contain 150,000,000 tons of natural fertilizer. Additional nitrate fields will be reserved by government for Cosana on payment of fee of 10 pesos a ton. Class A stock cannot be transferred or given as guarantee for any purpose. Company is to be established for sixty years, and cannot be liquidated before period expires unless 75 per cent of shareholders with right to vote express such wish. Other provisions include exemption of nitrate and iodine from export duties, removal of tariff duties on machinery and other products, fixed tax of six per cent on profits, centralized buying agencies here and abroad, centralized distribution and sales agencies, and contemplates reductions of transportation charges, which tend to lower cost of nitrate, and of iodine. Long-desired nationalization of industry is considered assured by government's holding of 50 per cent of shares and also its right to name four out of twelve members of directorate. Dividends payable to government as principal shareholder during first four years of operation, already fixed, will compensate for large sums hitherto collected from tax on exports of nitrate, which will end when the combination starts operations. Government gets 186,000,000 pesos (about \$22,000,000) first year, 180,000,000 the second year, 160,000,000, third year and 140,000,000 fourth, thereby not affecting national budget by removal of one of principal items of income during period when corporation can gradually get into its stride.

Sir William Henry Bragg, director, Royal Institution of Great Britain and director, David Faraday Research Laboratory, receives Franklin gold medal from Franklin Institute in recognition of studies in atomic and molecular structures.

Lord Melchett, chairman, Imperial Chemical Industries, expresses opinion that Britain should not join combination of European countries proposed by Aristide Briand, but should develop British empire as economic unit.

Burt H. Goddin becomes associated with Crown Cork & Seal Co., Baltimore, as special sales representative in screw cap and large crown division.

W. F. Van Riper, dyestuffs department, E. I. du Pont de Nemours & Co., gives illustrated technical talk on color and dyestuffs at Atlantic City, May 26.

Charles S. McCain, president, Chase National Bank, is elected a director, Corn Products Refining Co., to succeed Clarence Kelsey, deceased.

American Pine Chemical, Inc., incorporates under laws of Delaware, capital 50,000 common shares.



**Bichromate of Soda**  
**Bichromate of Potash**  
**Chromic Acid**  
**Oxalic Acid**



*“Mutualize Your Chrome Department”*

**MUTUAL CHEMICAL CO. OF AMERICA**  
270 Madison Avenue  
New York, N. Y.

## Proposed Tariff Would Increase Chemical Rates By 2.18 Per Cent

Pending tariff bill (H. R. 2667) contains provisions increasing customs duties on chemicals from \$27,688,949 to \$29,748,153, based on 1928 imports, an increase of 2.18 per cent in ad valorem valuation, according to address in Senate by Senator Smoot of Utah. Increase in duties and in computed ad valorem rate results almost entirely from: (1) Increase in duty on olive oil in interest of domestic producers of competitive oils and raw materials therefor; (2) Increase in duty on soy bean oil in interest of growing domestic production of soy beans for oil crushing; (3) Increase in duty on casein in interest of domestic producers of skim milk, raw material for casein; (4) increases in duties on starches, dextrines, glue, and gelatin, in interest of American farmers who produce competitive raw materials; (5) increases in duties on oleic acid and stearic acid, joint products of tallow, in interest of American farmers and ranchers; (6) increases in rates on butyl acetate and amyl acetate, competitive with domestic fermentation of corn, in interest of American farmers who produce cash corn as major crop.

In Chemical Schedule 1 there are 535 named items and basket clauses in present law, as compared with 556 in final draft of H. R. 2667. Twenty-six items have been transferred from dutiable to free list, and 14 have been transferred from free to dutiable list. No change has been made in rates on 469 items and basket clauses. Of the rest the duties have been increased on 47 and decreased on 66.

Provision is made for free entry of 11 materials used chiefly for fertilizers or for manufacture of fertilizers, notwithstanding any other provisions in the bill.

Important agricultural insecticides also were transferred to free list. Moreover, important transfers to free list were made with respect to noncompetitive raw materials for various manufactured chemicals, in purchase of which farmers as well as city dwellers are interested.

## New Incorporations

Kaylpto Chemical Co., Buffalo, N. Y.—L. Beitz, Buffalo, \$56,000.  
Es-Fen Chemical Corp., Philadelphia, Pa., medicinal preparations—Corp. Guarantee & Trust Co., 70,000 shs com.  
Electric Steel & Iron Development, Inc., N. Y. City, chemicals—U. S. Corp. Co., 25,000 shs com.  
Electro Chemical Lab., Inc. Philadelphia, Pa., electro plate and vulcanite—Corp. Guarantee and Trust Co., 10,000 shs com.  
Mutual Carbonic Corp., New York City, carbonic gas, its products—Arley B. Magee, Inc., Dover, Del., 5,000 shs com.  
Spencer Products Corp., New York City, chemicals—U. S. Corp. Co., 10,000 shs com.  
Serna of Canada, Ltd., Richmond Hill, Ont. chemicals—Russel A. Whitely, Bruce P. Davis, Ella L. Harrod, \$50,000.  
Pigment & Chemical Co., Ltd., Montreal—Claude S. Richardson, Francis G. Bush, William P. Creagh, 5,000 no par shs.  
Pietou Oil & Chemical Co., Montreal—John D. Kearney, Thomas Robillard, Herbert Beatty, \$250,000, 250,000 no par shs.  
Canadian Aniline & Extract Co., Ltd., Hamilton, Ont.—D'Arey A. C. Martin, Alice McKenzie, Doris Thompson, 40,000 no par shs.  
Feedwaters Ltd., Toronto, Ont., chemicals—W. R. Conklin, Edward S. Bentley, Robert W. Ownes, \$10,000, 1,000 no par shs.  
Continental Chemical Corp., Ltd., Toronto, Ont.—Robert S. Joy, Frank M. Squires, Thomas B. Farrell, \$40,000.  
Pharmaceutical Research Corp., Wilmington, Del., chemicals—Charles G. Guyer, 2,000 shs com.  
Synthetic Chemicals, Inc., Greenville, N. J., chemicals—Corp. Trust Co., Jersey City, \$50,000 pf, 10,000 shs com.  
District Wholesale Corp., Philadelphia, Pa., chemicals—Corp. Guarantee and Trust Co. \$20,000, 200 shs com.  
Rayon Assets Corp. of N. J., Jersey City, manufacture rayon—U. S. Corp. Co., New York, 100 shs com.  
American Pine Chemical, Inc., Wilmington, Del., chemists—Corp. Service Co., \$1,000,000, 50,000 shs com.  
Industrial Chemical Corp., Ltd., Wilmington, Del., stocks, bonds—Corp. Trust Co., 2,000 shs com.  
Laboratory Institute, Inc., Wilmington, Del., chemicals, medicines—Corp. Trust Co., 2,000 shs com.  
Antoxylin Chemical Corp., New Brunswick, manufacture chemicals—R. E. & A. D. Watson, New Brunswick, \$1,100,000.  
Rus-Go Products, Inc., Roselle, chemists—George E. McElroy, Elizabeth, N. J., \$50,000.  
Consolidated Pharmacal Corp., Wilmington, Del., chemicals—Corp. Trust Co., 50,000 shs com.  
Patent Chemicals, Inc., Jersey City—Moses & Nolte, N. Y., 5,000 shs com.  
Standard Bauxite & Chemical Co., Inc., New Rochelle, N. Y., minerals—Corp. Trust Co., 500,000 shs com.  
Newport Chemical Corp., Wilmington, Del., acids—Corp. Trust Co., 100 shs com.

## Kay-Fries Chemicals Formed to Merge Fries & Fries and Kay Labs.

Kay-Fries Chemicals, Inc., is formed to acquire business and assets of Fries & Fries Co., Cincinnati, and Kay Laboratories, Inc., West Haverstraw, N. Y. Directors of company are: Sir William Alexander, K. B. E., M. P., chairman of Charles Tennant & Co., Ltd., and president of American-British Chemical Supplies, Inc.; A. G. Kay, former president of Kay Laboratories and member of the firm of Kay-Richards, Pittsburgh; W. McC. Cameron, first vice-president of American Celanese Corp.; J. T. Ames, associated with Kay Laboratories; and E. H. Watson, vice-president and director of American-British Chemical Supplies, Inc. Company will make synthetic and aromatic chemicals, insecticides and specialties in solvent and plasticizer field. Dr. V. I. Saftro, formerly in charge of commercial introduction and development of insecticide products, Kay Laboratories, will continue in this capacity with the new organization. A new plant is under construction adjoining present site of Kay Laboratories at West Haverstraw, and the company's entire production will be centralized at this point upon its completion.

Western New York Section, American Chemical Society elects following officers: chairman, L. E. Hoyt, Larkin Co., Buffalo; vice-chairman for Buffalo, B. G. Buckley, patent attorney; vice-chairman for Niagara Falls, P. J. Caslisle, Roessler & Hasslach Chemical Co.; secretary, H. V. Daviss, Roessler & Hasslach; treasurer, E. L. Whittford, Oldbury Chemical Co., Niagara Falls; councilors, W. J. Marsh, Hooker Electrochemical Co.; R. J. McMullin, Mathieson Alkali Works; and F. L. Koethen, Acheson Graphite Corp.

Robert H. Gaede, Gaede Silk Dyeing Co., Paterson, N. J., is elected president, American Association of Textile Chemists and Colorists. Other officers elected were: Henry F. Herrman, General Dyestuffs Corp., New York, vice-president; Clemens Hoppe, Oriental Silk Printing Co., Paterson, secretary, and John J. Sokolinski, Arabol Manufacturing Co., New York, re-elected treasurer.

American Silica Gel. Corp. joins Railroad Equipment Co. (Eisenbahn Verkehrsmittel A.-G.), the Refrigerator Transit Co. (Kuehltransit A.-G.), the Julius Pintsch A.-G. and the Dutch Koel en Vrieshuizen N. V. to organize jointly owned Swiss subsidiary for development of iceless refrigeration and to rent iceless refrigerator cars operated on American system in Europe.

Insecticide and Disinfectant Manufacturers' Association meets in Chicago, June 9-11. Among the speakers are Leslie Hart, Bureau of Chemistry and Soils, St. Louis; Dr. Emil Klarman; F. W. Foreman; Dr. William Dreyfus; Russell B. Stoddard. General program is in charge of E. B. Loveland, Stanco, Inc., New York.

J. Mack Schantz, technical service representative, Hercules Powder Co. naval stores dept., delivers address on wood rosin at Toronto convention, National Association of Ink Makers, June 2.

Chicago rubber group, American Chemical Society, at last spring meeting discusses safety in rubber industry, R. C. Salisbury, Fisk Rubber Co. giving talk on the subject.

Chemical Line Co., Bellefonte, Pa., is formed by merger of Chemical Lime Co. and Center County Lime Co., with capital of \$1,500,000.

Singmaster & Breyer consulting chemists, New York, announces new telephone numbers, Lexington 7444-6.

Allied Tar & Chemical Co., Elizabeth, N. J., loses fifteen small buildings by fire May 12.

Hercules Powder Co. issues booklet on modern lacquers.

**B**ecause we  
*specialize in*  
**NAPHTHAS**

**W**e can supply you with exactly the cut or fraction you need to do your particular job better—and cheaper! By fractionating narrow distillation ranges to meet individual specifications, we give you Naphthas which replace much more expensive products, such as Toluol and Benzol. High-efficiency rubber solvents, grease-cutting N a p h t h a s, all special cleaning Naphthas—Naphthas that already *are*, and Naphthas that must be created—that's our line! You can have samples of any special fractions for the asking. Drop us a line.

**AMERICAN MINERAL  
 SPIRITS COMPANY**

205 E. 42nd Street  
 New York, N. Y.  
 Chicago, Ill. - - - - Cleveland, O.

**CHEMICAL SOLVENTS CO.**  
 110 E. 42nd Street  
 New York, N. Y.

**WM. S. GRAY & Co.**

342 MADISON AVE.,  
 NEW YORK

Vanderbilt 0500

Cables: Graylime

**Acetate of Lime**

**Acetate of Soda**

**Acetone C. P.**

**Methanol**  
 (all grades)

**Methyl Acetone**

**Denatured Alcohol**  
 (all formulas)

**Formaldehyde**

**Phenol U. S. P.**

**Benzol**

**Whiting**

**Magnesium Carbonate**

**Magnesium Oxide**

**Quinine Bisulphate**

# The Financial Markets

## E. I. du Pont de Nemours & Co. Offers Additional Common at \$80

**Common Stockholders Offered 357,071 Shares In Ratio of 1 for 30—C. M. A. Stine, H. R. Cardeth, Finn Starre and William Richter Elected New Directors—A. O. Echols and Dr. Stine Elected to Executive Committee.**

E. I. du Pont de Nemours & Co., offers common stockholders of record June 5 to subscribe to 357,071 additional shares of common stock at \$80 a share, in ratio of one new share for each 30 shares held. Rights expire on July 15. The proceeds from the sale, which will amount to \$28,565,680, will be employed for capital outlays in connection with expansion of plants and the business of the company's various industries.



C. M. A. Stine

Company declared the regular quarterly dividends of \$1 on the common and \$1.50 on debenture stock. Common dividend is payable June 14 to stock of record May 29, while debenture dividend is payable July 25 to stock of record July 10.

Payments required for subscriptions to the new stock will be: \$20 a share on July 15, \$30 a share on September 20 and \$29.25 a share on December 20. This final payment is adjusted on the basis of dividend payments and interest on the first two instalments. There are arrangements for other options, including payment in full, which are based also on adjustments of dividend and interest allowances.

H. F. Brown and William Coyne have retired as members of the executive committee and A. O. Echols, treasurer of the company, has been made a member of the committee and elected vice president in charge of finance, succeeding W. S. Carpenter, Jr., who recently was elected chairman of the committee, succeeding Irene du Pont. Dr. C. M. A. Stine, chemical director of the company, also was made a member of the executive committee. J. B. Ehasen, general assistant treasurer, was elected treasurer, succeeding A. O. Echols.

New directors elected are Dr. Stine, Dr. Finn Starre, director of development; William Richter, general manager of the fabrics and finishers department, and Dr. Hector R. Cardeth, president, Roessler & Hasslacher Chemical Co., recently taken over by Du Pont de Nemours.

United States Dyestuff Corp., Boston, for year ended Dec. 31, 1929, reports: assets: Merchandise, \$5,766; notes receivable, \$4,802; accounts receivable, \$4,964; cash, \$3,597; securities, \$22,521; advances, \$14,662; loans, \$866; total, \$57,178. Liabilities: Common stock, \$500; accounts payable, \$14,710; notes payable, \$22,086; profit and loss, \$19,882; total, \$57,178.

Allied Chemical & Dye Corp. declares regular quarterly preferred dividend of \$1.75 a share, payable July 1 to stock of record June 11.

## Solvay American Investment Corp. Reports Net of \$3,594,353 for Year

Solvay American Investment Corp. reports for year ended March 31, 1930, net income of \$3,594,353 after charges and taxes, equivalent after deducting preferred dividends paid on the 5½% preferred stock, to \$9.86 a share on 300,000 shares of common stock. This compares with \$2,204,350 or \$7.34 a share on common stock in preceding year, when no preferred was outstanding. Stock dividends received were not treated as income, but entered on the books by reporting only the number of shares received and making no additions to the book values of the securities involved.

As of March 31, 1930, security holdings had a market value of \$149,286,414 compared with an aggregate cost of \$79,457,499, an appreciation of \$69,828,915, or over 87 per cent. The company's principal investment is 486,812 shares of Allied Chemical & Dye Corp. common stock. After deducting amounts paid in dividends the total net worth at market values at end of March, applicable to the preferred stock, amounted to \$149,510,771 and to the common stock \$124,510,771. The net worth applicable to the common stock on March 31, 1929, was \$106,006,309.

Solvay American Investment Corp. investment securities included March 31 following securities: 486,812 Allied Chemical & Dye Corp. common, 12,139 Libbey-Owens Securities Corp. restricted voting trust cert., 1,000 unrestricted v. t. c., 19,135 American International Corp. common, 25,600 Kreuger and Toll Co. A. C. for participating debentures, 500 U. S. Steel Corp. common, 6,020 Equitable Trust Co. capital, 100 First National Bank of City of N. Y. capital, 642 Guaranty Trust Co. capital, 2,000 French & Foreign Investors Corp. common fully paid, valued at cost, 2,000 same, preferred, 75 per cent paid, valued at cost.

## American Potash Nets \$1,348,428

American Potash & Chemical Corp. reports for 1929 net income of \$1,348,428, after charges, equal to \$2.25 a share on 528,390 no par capital shares outstanding. This compares with \$1,588,882, or \$3.01 a share in 1928. Net sales were \$4,279,600 in 1929, compared with \$4,340,328 in 1928, and cost of sales \$2,327,279, compared with \$2,171,155 in 1928.

Current assets totaled \$3,030,427 at the end of 1929, compared with \$2,271,625; current liabilities, \$316,614, against \$349,076; and total assets \$11,717,105, compared with \$10,929,529 at the end of 1928.

## Grasselli Assets Total \$47,091,453

Grasselli Chemical Co. reports for end of year 1929: Assets: Real estate \$3,220,273, Machinery, buildings, etc. \$28,399,261, Merchandise \$9,412,542, Notes receivable \$138,714, Accounts receivable \$3,869,961, Cash \$1,375,676, Securities \$549,237, Charges \$125,785, total \$47,091,453; Liabilities: Capital stock (shares with par value) \$100,000, Mortgages . . . ., Accounts payable \$882,521, Notes payable . . . ., Reserves \$646,980, Surplus \$1,075,055, Accrued expenses \$449,948, Accounts due parent Co. (E. I. du Pont de Nemours) \$9,913,917, Paid-in surplus \$34,023,028; total \$47,091,453.

Wood Products Co., Ltd., will not pay off issue of \$222,500 4 per cent bonds due August 1, but will renew for another ten years, by arrangement with Standard Chemical Co., Ltd., which controls company.

# DISCRIMINATION

is the prerogative of every buyer and should be exercised especially in the purchase of pure chemicals for medicinal and scientific uses.

## *Mallinckrodt* CHEMICALS

appeal to critical users wherever purity and reliability are required. They represent *distinctive excellence*, the natural development of sixty years of manufacturing experience.

*Send for our complete price list*

## MALLINCKRODT CHEMICAL WORKS

SAINT LOUIS

MONTREAL

PHILADELPHIA

NEW YORK

## Sulphuric Acid

60° and 66° Commercial

66° Textile Clear



## Copper Sulphate

Granular, Large, Medium  
and Small Crystals



Production of Tennessee Copper Company  
Copperhill, Tennessee

*Address all inquiries to:*

**SOUTHERN AGRICULTURAL CHEMICAL CORP.**

*Exclusive Sales Representatives*

ATLANTA

621-625 Grant Building

GEORGIA

## Anglo-Chilean Nitrate Reports Six-Months' Deficit of \$1,249,865

Anglo-Chilean Consolidated Nitrate and subsidiaries, for six months ended December 31, 1929 reports deficit of \$1,249,865, after taxes, depreciation, amortization and interest, including interest on debenture stock and debenture bonds but before depletion. After charging out depletion there was a deficit of \$1,299,311, comparing with deficit of \$1,828,756 in corresponding period of 1928.

Date of fiscal year has been changed to end June 30, instead of December 31.

Consolidated income account for six months ended December 31, 1929, follows: Operating revenue \$1,420,929; other income \$616,346; total income \$2,037,275; taxes, interest and other charges \$2,244,896; depreciation, \$987,674; amortization of patents \$54,570; deficit \$1,249,865; depletion \$49,446; deficit \$1,299,311.

## United Chemicals Quarter Net Equivalent to 87 Cents a Share

United Chemicals, Inc., reports for quarter ended March 31, 1930, net profit of \$142,752 after depreciation, federal taxes, etc., equivalent under participating provisions of shares, to 87 cents a share on 115,150 no-par shares of \$3 cumulative participating preferred stock and 41 cents a share on 102,000 no-par shares of common stock outstanding at end of period. Earnings if applied directly to preferred stock are equal to \$1.24 a share. Consolidated balance sheet as of March 31, 1930, shows current assets of \$4,242,053 and current liabilities of \$245,029.

## Campbell & Co. Assets Total \$801,917

John Campbell & Co., aniline dyes, for the year ended Dec. 31, 1929, reports: Assets: Machinery, \$15,853; furniture, fixtures, equipment, etc., \$23,922; autos, trucks, etc., \$4,425; merchandise, \$73,339; notes receivable, \$3,977; accounts receivable, \$110,712; cash, \$19,730; securities, \$549,300; deferred charges, \$659; total, \$801,917. Liabilities: Common stock, \$450,200; accounts payable, \$102,151; notes receivable, discounted, \$1,377; reserves, \$35,406; surplus, \$212,783; total, \$801,917.

Celotex Co. reports for six months ended April 30 net profit of \$227,955 after depreciation, interest, federal taxes, etc., equivalent after dividend requirements on 7 per cent preferred stock to 19 cents a share on 221,208 no-par shares common stock. This compares with \$370,338 on \$1.03 a share on 178,033 common shares corresponding period last year.

Westvaco Chlorine Products Corp. reports net income of \$239,762, equal to 89c a common share after preferred dividend, for first 1930 quarter, compared with net of \$301,941 or \$1.32 a share in first period 1928.

Smith Agricultural Chemical Co. reports for year ending Oct. 31, 1929 net income of \$183,180, equal after preferred dividend to \$35.58 a common share, as compared with net of \$203,564, or \$40.06 a common share in 1928. Sales were \$2,556,321.

Eastman Kodak Co. declares extra dividend of 75 cents and a regular quarterly dividend of \$1.25 on common stock and 1½ per cent on preferred stock, all payable July 1 to holders of record May 31.

General Dyestuff Corp. shows increase in surplus from \$183,749 to \$623,481. Merchandise is valued at \$2,266,114 as compared with \$1,792,283 at end of 1928.

Virginia-Carolina Chemical Corp. declares regular quarterly dividend of \$1.75 on 7 per cent prior preference stock.

## Newport Co. Offers Additional Common at \$20 Per Share

Newport Co. offers common stockholders rights to subscribe on or before June 20, 1930, at \$20 a share for additional common stock in ratio of one share for each 40 shares of common stock held of record May 23.

Company also declares regular quarterly dividends of 75 cents on Class A convertible stock and 50 cents on common stock, both payable June 2 to stock of record May 23.

Offering of rights is second made by the company this year, common stockholders having received privilege of subscribing to additional stock on same basis in February.

For quarter ended March 31, 1930, Newport Co. reports net profit of \$426,017 after depreciation, federal taxes, etc., equivalent, after dividend requirements on \$3 Class A stock, to 82 cents a share on 485,705 shares of no-par common stock outstanding at end of quarter. This compares with \$355,930 or \$1.01 a share on 251,250 common shares in first quarter of 1929.

Consolidated income account for quarter ended March 31, 1930, compares as follows:

	1930	1929
Net sales.....	\$2,666,955	\$2,591,106
Costs and expenses.....	2,038,928	2,077,681
Oper. profit.....	\$628,027	\$513,425
Other income (net).....	6,793	23,250
Total income.....	\$634,820	\$536,675
Depreciation.....	151,874	130,745
Federal taxes.....	56,929	50,000
Net profit.....	\$426,017	\$355,930

Consolidated balance sheet of Newport Co. and subsidiaries as of March 31, 1930, compares as follows:

	Assets	Mar. 31, '30	Dec. 31, '29
*Property, plant and equipment....		\$7,640,810	\$7,663,475
Form and process.....		476,663	473,923
Cash.....		641,121	761,345
Accounts receivable.....		1,149,830	944,565
Inventories.....		4,427,546	4,178,705
Investments.....		442,200	277,200
Deferred charges.....		185,239	218,712
Total.....		\$14,963,409	\$14,520,925
	Liabilities		
Capital stock.....	†\$5,580,850		\$5,454,470
Purchase money obligation.....	435,000		435,000
Accounts payable.....	640,500		666,521
Federal taxes.....	252,884		212,377
Contingent reserve.....	620,568		620,568
Other reserve.....	293,271		283,318
Surplus.....	7,140,336		6,848,671
Total.....		\$14,963,409	\$14,520,925

\*After depreciation. †Represented by 36,190 shares (par \$50) of \$3 Class A convertible stock and 485,705 shares of no-par common.

## American Commercial Alcohol Net Off

American Commercial Alcohol Corp. reports for quarter ended March 31, 1930, net profit of \$175,349 after charges and federal taxes, equal to 45 cents a share on 389,401 shares of no-par capital stock. This compares with \$290,449 or 74 cents a share in first quarter of 1929, based on the same number of shares.

Consolidated balance sheet as of March 31, 1930, shows cash of \$515,527 and total current assets of \$3,886,189. Current liabilities were \$990,491 a ratio of nearly 9 to 1.

*Special*

**WOOD CREOSOTE OIL**

for  
Flotation Process of Separating Minerals

**WOOD CREOSOTE OIL**

for  
Wood Preservation

**WOOD CREOSOTE OIL**

for  
Killing Fungus Growths and Weeds

*The  
Cleveland  
Cliffs  
Iron Co.*

HOME OFFICE 14TH FLOOR UNION TRUST BUILDING  
CLEVELAND, OHIO.

**KESSCO  
PRODUCTS**

**SOLVENTS AND  
PLASTICIZERS**

*for the Lacquer Industry*

*Ethyl Acetate  
Butyl Acetate, Nor. and Sec  
Amyl Acetate*

*Butyl Propionate  
Amyl Propionate  
Butyl Butyrate  
Ethyl Lactate  
Butyl Alcohol Sec.  
Amyl Alcohol*

*Refined Fusel Oil  
Butyl Stearate  
Dimethyl Phthalate  
Diethyl Phthalate*

*Dibutyl Phthalate  
Diamyl Phthalate  
Dibutyl Tartrate  
Triacetine*

*Special Solvents  
and Plasticizers*

Warehouse stocks carried at all  
principal consuming points

**KESSLER CHEMICAL  
CORPORATION  
ORANGE, N. J.**

## Imperial Chemical Industries Reports Cash Assets of £5,957,987

Imperial Chemical Industries, Ltd., reports liquid assets of £7,946,523 (book value) in marketable securities and £5,957,987 in cash, the Financial News points out. "That is a very large amount. The cash holding of the company has grown steadily since the first accounts in 1927, when the amount was £661,915. The balance sheet is to December 31, when rather better rates were to be had for money than more recently. The preliminary figures have already confirmed the impression that the chemical industry has had a fair year. It is very well worth noticing that in the report the organization's trade in the United Kingdom is said to have been maintained, "depression in certain sections being offset by increased activity in others."

## American Smelting & Refining Offers New Preferred at \$103

American Smelting & Refining Co. offers \$17,500,000 6 per cent cumulative second preferred stock at \$103 a share, proceeds to be used for acquisition of properties or securities, construction and other purposes. Net annual income of company and subsidiaries for five years ended Dec. 31 last, after all charges, averaged \$17,769,408, or more than 3.7 times dividend requirements on the 7 per cent preferred and the 6 per cent second preferred. Net income for 1929 was more than 4.6 times such requirements. Company pays annual dividend on common stock with indicated value of over \$125,000,000.

## General Industrial Alcohol Reports Eight-Months' Net of \$257,988

General Industrial Alcohol Corp. reports for eight months ended Dec. 31, net income of \$257,988, or \$2.17 a capital share. Gross income totaled \$753,477, surplus stock, \$951,216; current assets, \$2,341,866; current liabilities, \$969,587; total assets, \$6,777,916. Bond interest was earned 3.51 times during eight months.

International Printing Ink Corp. certificates of deposit for 6 per cent preferred stock, with warrants, and common stock under plan for proposed consolidation with divisions of Newport Co. are listed for trading on N. Y. Stock Exchange, to provide for consummation of consolidation.

Standard Chemical Co., Ltd., Toronto, reports for year ended March 31, 1930, net profit of \$135,799 after interest, depreciation and federal taxes, equivalent to \$3.64 a share on 37,277 no-par shares of capital stock. This comparing with \$209,067 or \$5.61 a share in preceding fiscal year.

Glidden Co. issues \$6,000,000 five-year 5½ per cent notes, to be only funded debt of company. Earnings for year ending October 31, 1929 were equal to over ten times annual interest charges on these notes.

Associated Rayon Corp. first annual report shows net income for year ending Dec. 31, 1929 of \$1,611,378.08. Preferred dividends paid Mar. 1 and June 1, 1929 amounted to \$580,000, leaving a balance of undistributed income of \$1,080,454.13.

General American Tank Car Corp. offers new \$4,050,000 issue 4½ per cent equipment trust certificates, Series 20, due June 1, 1931 to 1945, priced at 4.20 to 5.05 per cent, and secured by 1,150 new cars, valued at \$5,475,000, or about 135 per cent value these certificates.

Texas Gulf Sulphur declares \$1 dividend on 2,540,000 shares capital no-par stock.

American Potash Co. is granted tax rebatement and refund for \$236,519 by Bureau of Internal Revenue.

## I. G. Declares Extra Dividends on Both Common and Debentures

I. G. Farbenindustrie declares two per cent extra dividend on 800,000 common shares as well as regular dividend of 12 per cent and one per cent extra dividend on 250,000 debentures as well as regular of six per cent. Bonus distributions were declared out of American pre-war property totaling 21,000,000 marks which was returned last year. Company reports net profit for year of 104,598,000 marks, against 118,450,000 marks in 1928, after deduction of 70,100,000 marks for depreciation, against 71,777,000 marks in 1928. Regular common dividend distribution absorbed 96,000,000 marks.

American investment houses have been substantial buyers of I. G. Farbenindustrie 6 per cent convertible and participating debentures at prices ranging from par to the current quotation of around 112 marks, according to the "Wall Street Journal." These debentures were originally offered at par two years ago to stockholders of I. G. Farbenindustrie and advanced to 150 following their listing on the Berlin Stock Exchange. Since that time they have fluctuated rather vigorously, as is usual with convertible bonds in a period of gyrating stock prices.

As their title implies, the bonds are endowed with rather unusual features. When these obligations were originally offered in the amount of 250,000,000 marks (about \$60,000,000), it was apparent that I. G. Farbenindustrie supplied the debentures with several "kicks," so as to accomplish the piece of financing at a relatively low rate.

## U. S. Color & Chemical Lists Total Assets at \$589,936

United States Color & Chemical Co., reports for end of 1929: assets, merchandise, \$9,227; furniture, fixtures and tools, \$5,211; accounts receivable, \$12,401; cash, \$1,604; securities, \$317,100; prepaid items, \$2,155; expenses, \$12,184; good will, \$100,000; profit and loss, \$130,050; total, \$589,936. Liabilities: capital stock, (only par value shares) \$500,000; accounts payable, \$9,083; notes payable, \$74,210; salaries, \$6,642.

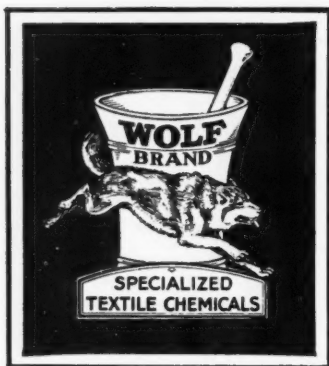
International Salt Co. declares \$2 dividend on present common stock, payable July 1. Directors also vote to split stock three for one; to change stock from \$100 par to no-par, and offer right to purchase additional no-par stock at \$36 share in proportion of one share for each three of new no-par shares held, funds to be used for acquisition of Sterling Salt Co., etc.

New Jersey Zinc Co. reports for quarter ended March 31, 1930 net income of \$1,671,867 after taxes, depreciation, depletion, contingencies, etc., equivalent to 75 cents a share (par \$25) on 1,963,264 shares of stock. This compares with \$2,026,934 or \$1.03 a share in first quarter of 1929 computed on above number of shares.

Columbian Carbon Co. and subsidiaries report for quarter ended March 31, 1930, net income of \$810,005 after depreciation, depletion and federal taxes, equivalent to \$1.62 a share on 498,505 shares of no-par stock. This compares with \$1,059,957, or \$2.32 a share on 457,344 shares, in first quarter of 1929.

American Agricultural Chemical Co. sells Gasparillo Inn to Barron G. Collier. Company also arranges to call additional block of first refunding mortgage 7½ per cent bonds (due 1941) for redemption Aug. 1, at 103½.

Aluminum, Ltd., offers new \$13,000,000 issue 6 per cent cumulative preferred stock, representing initial offering of \$25,000,000 authorized.



## TEXTILE CHEMICALS FOR YOUR USE

SOLUBLE OILS

WOLFCO SIZINGS

CREAM SOFTENERS

SILK BOIL-OFF OILS

WOOL SCOURING OILS

RAYON KNITTING OILS

RAYON SOFTENERS

DYE PENETRATORS

HYDROSULPHITES

for all purposes

TEXTILE GUMS

for printing

TIN DYE OIL [DELUSTRE S-8A

MONOPOLE OIL

(Reg. U. S. Pat. Off.)

**JACQUES WOLF & Co.**  
MANUFACTURING CHEMISTS AND IMPORTERS  
PASSAIC, N. J.

### *Warehouses:*

Providence, R. I.

Philadelphia, Pa.

Chattanooga, Tenn.

Utica, N. Y.

Chicago, Ill.

Greenville, S. C.

# STABILISAL "A"

THE increasing sales and ready acceptance of this product by leading lacquer manufacturers prove conclusively its outstanding advantages in the manufacture of bronze lacquers, and clear metal lacquers.

Stabilisal "A" is the only product, which when added in small quantities to bronzing lacquers, prevents their jellying.

Stabilisal "A" is the only product, which when added in small quantities to clear metal lacquers, minimizes tarnishing and discoloration of the film.

*Samples and literature  
upon request*

**KUTTROFF,  
PICKHARDT  
& CO., Inc.**

1150 Broadway

New York, N. Y.

## Davison Chemical Forms Company To Aid Employee Stock Purchases

Davison Management Co., Baltimore, Md., formed to handle purchase of stocks of Davison Chemical Co. and Silicia Gel by employees of companies. Employees and executives of Davison subsidiary and affiliated companies also will be offered the opportunity to participate.

Number of shares to be held under plan may run as high as 20,000 or 30,000. Stock will be paid for under provision of five-year participating plan. The limit of participation will be based on a fixed percentage basis on salary of employees.

## Dewey & Almy Chemical Co. Reports Surplus of \$394,811

Dewey & Almy Chemical Co. reports for end of 1929 current assets, \$421,023, current liabilities, \$222,235, total assets of \$1,501,951, comparing with \$311,629, \$97,075, and \$925,666 at end of 1928. Land, buildings, etc., are listed at \$939,141; formulas and processes, \$60,000; investment in Darex A/G, \$59,858; cash \$37,768; notes receivable, \$4,420; accounts receivable, \$106,665; inventories, \$265,686. Company surplus was \$394,811, compared with \$282,510 end of 1928.

International Nickel Co. of Canada, Ltd., and subsidiaries, for quarter ended March 31, 1930, report net profit of \$4,616,144 after depreciation, depletion, interest and federal taxes, equivalent after 7% preferred dividend requirements, to 30 cents a share on 13,758,208 no-par shares of common stock. This compares with \$5,590,191, or 36 cents a share in first quarter of 1929.

Atlas Powder Co. declares regular quarterly dividend of \$1 on common, payable June 10 to stock of record May 29

Chemical Co., Baton Rouge, La., increases capital from 60,000 shares to 500,000 no-par shares.



## WON'T SOME ONE GIVE A LIBRARY TO CONGRESS, TOO ?

*Shoemaker in Chicago News*

## United Carbon Co. Reports Quarter Net of \$263,300

United Carbon Co. reports for quarter ended March 31, 1930, net profit of \$263,300 after depreciation, depletion and federal taxes, equivalent under the participating provisions of the shares, to \$3.82 a share on 21,069 shares (par \$100) of participating preferred stock outstanding at end of quarter and 46 cents a share on 393,073 no-par shares of common stock. This compares with \$235,369, or \$2.15 a share, on 27,055 shares of preferred stock and 44 cents a share on 393,073 common shares in preceding quarter and \$412,886, or \$5.12 a share, on 53,631 shares of preferred and 64 cents a share on 212,564 common shares in first quarter of 1929.

## General Printing Ink Net Equivalent to 81 Cents a Share

General Printing Ink Corp. and subsidiaries report for quarter ended March 31, 1930, net profit of \$217,457 after charges and federal taxes, equivalent, after \$6 preferred dividend requirements, to 81 cents a share on 185,000 shares of no-par common stock.

Consolidated income account for quarter ended March 31, 1930, follows: Net sales \$2,557,797; costs and expenses \$2,308,375; operating profit \$249,422; other income \$33,999; total income \$283,421; other deductions \$37,842; federal taxes \$28,122; net profit \$217,457.

I. G. Chemie of Basel, foreign stock holding company of I. G. Farbenindustrie, resorts to dividend guaranty of I. G. Farbenindustrie in order to make stipulated dividend payments on own shares. Company announces it will not call for additional payments on 80,000,000 Swiss francs of 50 per cent paid stock during 1930.

Vick Chemical Co. merges with Drug, Inc. with issuance of 456,000 common shares of Drug, Inc. common stock to Vick stockholders. Vick is to be ultimately dissolved. Each share of Vick stock will receive fifty-seven one hundredth share of Drug stock. After dissolution of present Vick Co., new company plans to form new Vick Chemical Co. to operate Vick business.

Monsanto Chemical Co. declares regular quarterly dividends of 31¼ cents and 1½ per cent in stock, payable July 1 to stock on record June 10.

Will & Baumer Candle Co., Inc. declares regular quarterly dividend of \$2 on preferred stock, payable July 1 to stock of record June 2.

I. G. Farbenindustrie, A. G., sells most of its interest in Terra-Film, A. G., to a Berlin syndicate, retaining only ten per cent.

American-British Chemical Supplies increases capital from \$150,000 to \$225,000.

Tennessee Copper & Chemical Corp. declares regular quarterly dividend of 25 cents, payable June 16 to stock of record May 31.

Texas Gulf Sulphur Co. declares regular quarterly dividend of \$1, payable June 16 to stock of record June 2.

Hercules Powder Co., Inc., declares regular quarterly dividend of 75 cents per share on common stock of record June 14.

American Zinc, Lead & Smelting Co. declares regular quarterly dividend of \$1.50 on preferred stock.

Glidden Co. omits the one per cent stock dividend issued in the three preceding quarters.

# The Industry's Stocks

1930 May				1930		1929		Sales In May		During 1930		ISSUES		Par \$	Shares Listed	An. Rate	Earnings \$-per share-\$	
High	Low	Last		High	Low	High	Low										1929	1928

## NEW YORK STOCK EXCHANGE

153	130	152	153	118	223	77	124,200	685,700	Air Reduction.....	No	770,000	\$3.00	5.63	4.61
319	295	315	343	255	354	197	52,300	179,900	Allied Chem. & Dye.....	No	2,286,000	6.00	12.60	11.12
126	123	126	121	125	118	4	1,400	7,800	7% cum. pfd.....	100	393,000	7.00	76.84	68.63
8	5	7	10	5	23	4	5,500	44,100	Amer. Agric. Chem.....	100	333,000		Nil	1.59
33	27	31	39	26	73	18	7,300	44,000	6% cum. pfd.....	100	285,000		2.47	7.86
20	16	18	33	16	55	20	35,600	321,500	Amer. Com. Ale.....	No	382,000	1.60	4.78	3.39
45	39	51	39	81	31	24,000	202,200	Amer. Metal Co., Ltd.....	No	868,000	3.00	3.23	3.58	
117	111	117	110	135	106	100	2,600	conv. 6% cum. pfd.....	100	69,000	6.00	47.53	26.52	
73	65	72	79	65	130	162	57,800	540,900	Amer. Smelt. & Refin.....	No	1,830,000	4.00	10.02	8.24
140	138	139	141	133	16	15	4,200	14,900	7% cum. pfd.....	100	500,000	7.00	43.66	37.17
15	12	22	12	92	25	11,600	145,400	Amer. Solvents & Chem.....	No	181,000		2.56	1.69	
30	24	33	24	138	123	5,700	37,200	conv. \$3 cum. pfd.....	No	113,000	3.00	8.01	6.71	
11	8	11	17	8	49	7	8,900	226,600	Amer. Zinc. Lead. & Smelt.....	25	200,000		11 mo. 0.76	Nil
69	60	65	79	56	111	49	500	15,900	6% cum. pfd.....	25	97,000	6.00	11 mo. 7.41	5.99
63	52	60	81	52	140	70	628,500	4,602,800	Anaconda Copper Mining.....	50	8,828,000	7.00	1928 6.63	3.37
24	22	24	29	22	49	18	117,700	182,300	Archer Dan. Midland.....	No	550,000	2.00	3 mo. 0.71	4.02
44	38	43	51	36	77	30	136,400	1,143,300	Atlantic Refining Co.....	25	2,678,000	1.00	6.10	5.58
88	78	80	106	78	140	67	4,300	104,800	Atlas Powder Co.....	No	260,000	4.00	7.66	4.39
105	102	106	101	106	90	380	2,180	6% cum. pfd.....	100	90,000	6.00	28.25	18.76	
3	2	5	2	12	4	1,700	41,700	Butte & Sup. Mining.....	10	290,000	2.00	Nil	0.28	
3	2	2	4	2	9	2	7,900	69,400	Butte Copper & Zinc.....	5	600,000		0.34	0.31
10	8	9	15	8	32	10	8,100	88,100	Certain-Teed Products.....	No	400,000		Nil	Nil
			45	25	81	45	4,200	7% cum. pfd.....	100	63,000		9 mo. 11.38	6.77	
74	49	74	49	127	53	100	900	Chile Copper.....	25	4,415,000	3.50	9 mo. 4.54	4.52	
64	59	62	64	59	90	40	16,000	35,100	Colgate-Palmolive-Peet.....	No	2,000,000	2.50	4.03	2.60
162	128	162	199	128	344	105	52,600	534,100	Columbian Carbon.....	No	457,000	4.00	7.84	6.39
33	25	30	38	25	63	20	509,100	3,392,000	Comm. Solvents.....	No	2,435,000	1.00	1.51	1.32
108	94	108	111	87	126	70	147,200	668,500	Corn Products.....	25	2,530,000	3.00	5.49	4.35
149	144	149	140	144	137	910	4,570	7% cum. pfd.....	100	250,000	7.00	62.59	50.98	
38	30	35	43	28	69	21	48,900	278,400	Davison Chem. Co.....	No	504,000	1.00	3.34	1.58
39	33	42	42	30	64	24	1,800	35,500	Devco & Reynolds "A".....	No	160,000	2.40	4.52	5.95
115	112	115	106	115	102	130	740	7% cum. 1st pfd.....	100	16,000	7.00	67.59	64.02	
134	120	130	145	112	231	80	126,600	1,024,700	Dupont de Nemours.....	20	10,339,000	4.00	6.99	5.97
121	119	120	121	114	119	107	4,600	20,100	6% cum. deb.....	100	978,000	6.00	78.54	69.06
252	220	240	255	175	264	150	201,300	672,000	Eastman Kodak.....	No	2,263,000	5.00	1928 9.60	9.61
127	126	127	120	128	117	110	950	6% cum. pfd.....	100	62,000	6.00	1928 326.17	326.68	
50	41	48	55	38	54	23	94,100	620,400	Freeport Texas Co.....	No	730,000	4.00	5.60	4.49
60	52	59	79	49	94	42	53,200	581,700	General Asphalt Co.....	No	411,000	4.00	3.65	2.79
27	23	24	38	23	64	26	60,700	322,300	Glidden Co.....	No	688,000	2.00	3.57	3.55
101	95	105	95	106	95	1,350	4,500	7% cum. prior pref.....	100	74,000	7.00	39.51	32.69	
80	79	85	78	130	80	400	4,400	Hercules Powder Co.....	No	568,000	3.00	5.95	22.04	
121	118	121	117	121	112	180	880	7% cum. pfd.....	100	114,000	7.00	38.16	35.35	
112	101	102	124	90	135	68	2,300	38,800	Industrial Rayon.....	No	191,000		7.26	8.68
6	5	6	8	4	17	4	7,700	96,900	Intern. Agric.....	No	444,000		0.79	1.66
66	61	62	67	54	88	40	1,400	14,400	7% cum. prior pfd.....	100	100,000	7.00	10.54	14.47
35	30	33	44	31	72	25	740,700	4,836,300	Intern. Nickel.....	No	13,781,000	1.00	1.47	1.05
153	100	148	153	69	80	61	95,580	107,750	Intern. Salt.....	100	61,000	6.00	11.32	7.23
114	98	111	148	98	242	90	182,800	944,300	Johns-Manville Corp.....	No	750,000	3.00	8.09	6.75
			25	20	42	20	16,900	Kellogg (Spencer).....	No	598,000	1.60	2.36	3.42	
75	60	74	81	52	113	40	51,600	308,100	Liquid Carbonic Corp.....	No	311,000	4.00	6.12	6.76
29	25	27	37	25	59	21	19,200	199,000	McKesson & Robbins.....	No	1,117,000	2.00	6 mo. 1.50	3.77
45	42	43	49	41	63	40	4,300	17,200	conv. 7% cum. pref.....	50	426,000	3.50	6 mo. 5.13	11.51
32	28	39	28	46	30	2,500	17,700	MacAndrews & Forbes.....	No	384,000	2.60	9 mo. 2.21	3.30	
			100	93	107	104	800	6% cum. pfd.....	100	28,000	6.00	9 mo. 44.84	65.48	
46	40	45	51	37	72	29	32,800	480,900	Mathieson Alkali.....	No	637,000	2.00	3.31	2.95
128	125	128	115	125	120	40	34,000	127,800	Monsanto Chem.....	No	404,000	1.25	2.83	3.76
59	51	56	63	48	80	47	15,100	132,300	National Dist. Prod.....	No	275,000	2.00	1.32	Nil
36	30	35	39	29	58	15	4,200	50,500	National Lead.....	100	310,000	5.00	25.49	11.45
157	141	189	137	210	129	410	3,670	7% cum. "A" pfd.....	100	244,000	7.00	41.95	24.10	
143	141	143	138	141	138	250	1,950	6% cum. "B" pfd.....	100	103,000	6.00	82.47	40.34	
119	117	119	116	23	115	100	7,000	Newport \$3 cum. conv. "A".....	50	130,000	3.00	29.79	5.55	
77	60	85	51	103	143	61,300	305,500	Penick & Ford.....	No	434,000		3.97	2.56	
53	41	53	55	26	60	22	140	7% cum. pfd.....	100	33,000	7.00	73.33	53.42	
			77	77	52	98	61,200	185,300	Proctor & Gamble.....	No	6,410,000	2.00	6 mo. 1.82	2.06
24	22	22	27	21	30	20	73,700	490,200	Pure Oil Co.....	25	3,038,000	1.50	3.06	0.97
115	110	115	110	116	108	450	3,030	8% cum. pfd.....	100	130,000	8.00	40.09	16.82	
55	51	53	56	49	64	43	30,800	414,100	Royal Dutch.....	10	993,000		1928 24.09%	24.10%
46	40	44	57	44	94	38	15,100	222,700	St. Joseph Lead.....	No	1,952,000	2.00	6 mo. 2.22	2.30
23	20	21	25	21	31	19	68,300	378,400	Shell Union Oil.....	No	13,069,000	1.40	9 mo. 1.39	2.04
72	66	70	75	55	31	51	116,900	711,200	Standard Oil, Calif.....	No	13,016,000	2.50	1928 3.66	3.19
81	71	80	84	58	83	48	1,667,100	5,693,300	Standard Oil, N. J.....	25	25,419,000	1.00	1928 4.43	1.52
37	34	37	40	31	48	31	255,200	1,380,200	Standard Oil, N. Y.....	25	17,380,000	1.60	1928 2.28	0.67
15	13	14	17	13	20	9	15,200	243,700	Tenn. Copper & Chem.....	No	857,000	1.00	1928 1.48	0.51
59	55	58	59	50	71	50	154,100	829,700	Texas Corp.....	25	9,851,000	3.00	4.91	5.34
61	55	60	67	54	85	42	88,000	717,300	Texas Gulf Sulphur.....	No	2,540,000	4.00	6.40	5.72
89	79	86	106	76	140	59	458,200	2,806,500	Union Carbide & Carb.....	No	9,208,000	2.40	3.94	3.72
68	54	68	84	44	111	40	138,800	958,000	United Carbon Co.....	No	393,000		1.75	1.99
94	85	89	139	85	243	95	50,300	779,500	U. S. Ind. Ale. Co.....	No	373,000	6.00	12.63	10.29
124	87	122	143	49	116	37	967,900	2,535,700	Vanadium Corp. of Amer.....	No	379,000	3.00	5.04	4.53
7	5	28	31	24	3	11,700	24,000	Virginia Caro. Chem.....	No	479,000		Nil	0.69	
31	27	34	28	65	15	3,700	24,000	6% cum. part. pfd.....	100	214,000		3.06	7.57	
85	75	85	75	97	69	520	4,420	7% cum. prior pfd.....	100	144,000	7.00	12.35	20.09	
48	41	59	57	94	30	4,100	32,200	Westvaco Chlorine Prod.....	No	123,000	2.00	4.32	3.60	

## NEW YORK CURB

10	8	...	10	7	23	6	700	2,500	Acetol Prod. conv. "A".....	No	60,000		1928	2.27
28	26	...	34	19	43	15	600	15,050	Agfa Ansco Corp.....	No	300,000			Nil
315	285	...	356	275	539	146	2,700	19,800	Aluminum Amer.....	No	1,473,000		1928	8.03
109	108	109	109	105	110	103	5,100	19,200	6% cum. pfd.....	100	1,473,000	6.00	1928	14.04
203	190	...	232	108	280	99	1,000	8,900	Aluminum Ltd.....	No	573,000		1928	0.02
27	24	26	37	24	80	20	157,600	1,213,700	Amer. Cyanamid "B".....	No	1,260,000	1.60		1.56
43	31	40	43	15	45	1	58,400	160,000	Anglo-Chilean Nitrate.....	No	1,757,000		6 mo.	Nil

1930 May		1930		1929		In May	Sales During 1930	ISSUES	Par \$	Shares Listed	An. Rate	Earnings \$-per share-\$	
High	Low	Last	High	Low	High							1929	1928
41	31	31	61	31	35	3	1,200	7,600 Assoc. Rayon Corp.	No	1,200,000			
55	48	48	60	39	87	30	4,500	conv. 6% cum. pfd.	100	200,000	6.00		
4	3	3	5	2	10	3	2,900	Brit. Celanese Am. Rets.	105	2,200,000			
23	20	21	35	20	57	20	2,600	Celanese Corp. of Amer.	No	1,000,000		1.07	0.67
77	72	80	90	72	122	80	400	7% cum. part. 1st pfd.	100	115,000	7.00	15.51	12.00
85	79	88	79	100	80	80	185	7% cum. prior pfd.	100	115,000	7.00	27.02	20.53
151	15	20	13	50	12	300	300	Celluloid Corp.	No	195,000		1928 1.29	0.86
100	99	103	90	110	82	125	775	7% cum. 1st part. pfd.	No	24,000	7.00	1928 17.33	9.96
12	11	13	10	25	12	900	5,400	Courtaulds, Ltd.	1£	24,000,000		1928 19.88%	34.88%
98	92	96	100	71	100	50	800	Dow Chemical	No	480,000	2.00		
15	12	21	12	22	14	800	18,000	Duval Texas Sulphur	No	500,000			
14	9	14	8	34	10	5,200	23,200	General Ind. Alc.	No	115,000			
155	141	150	166	131	209	115	34,800	Gulf Oil	25	4,415,000	1.50	9.83	8.06
191	19	19	23	19	41	17	200	Heyden Chemical Corp.	10	150,000		1928 2.02	1.02
5	5	7	5	11	6	100	1,400	Imperial Chem. Ind.	1£			1928 12.15%	10.23%
10	9	15	9	27	13	200	4,100	Monroe Chem.	No	100,000	1.50	2.54	1.76
35	33	33	42	24	52	21	3,700	Newport Co.	No	405,000	2.00	3.28	1.30
72	72	79	72	111	65	100	1,000	Shawinigan W. & P.	No	1,867,000	2.50	2.35	2.17
83	80	85	80	105	75	225	435	Sherwin-Williams Co.	25	594,000	4.00	7.85	6.99
26	21	24	34	18	48	14	9,800	Silica Gel Corp.	No	600,000			
56	51	53	59	49	63	45	100,600	Standard Oil Ind.	25	13,927,000	2.50	1928 8.33	3.26
31	29	30	34	30	149	121	9,800	Swift & Co.	100	1,500,000	8.00	8.71	9.87
17	13	13	22	13	550	111	6,300	Tubize "B"	No	79,000	10.00		
36	34	35	42	19	115	15	1,600	United Chemicals	No	122,000		0.74	
51	47	47	58	42	90	36	1,800	3% cum. part. pfd.	No	120,000	3.00	2.61	
								U. S. Gypsum Co.	20	765,000	1.60	3.98	7.21
CLEVELAND													
93	93	138	125	98	92	285	2,521	Cleve-Cliffs Iron	No	498,000	5.00	1928 8.41	3.80
85	81	82	85	80	105	75	1,041	Sherwin-Williams Co.	25	594,000	4.00	7.85	6.99
CHICAGO													
42	40	40	46	35	52	36	1,800	Abbott Labs.	No	120,000	2.00	4.92	4.00
10	8	10	15	10	26	12	1,755	Monroe Chem.	No	100,000	1.50	2.54	1.76
27	24	35	24	51	30	420	1,790	3.50 cum. pref.	No	30,000	3.50	13.35	10.32
31	29	30	33	29	145	123	20,550	Swift & Co.	100	1,500,000	8.00	8.71	9.87
CINCINNATI													
76	69	76	76	53	100	44	7,695	Proctor & Gamble	No	6,410,000	2.00	6 mo. 1.82	2.96
PHILADELPHIA													
96	95	95	98	95	116	89	600	Pennsylvania Salt	50	150,000	5.00	10.64	8.27
MONTREAL													
2	1	1	3	1	22	2	200	Asbestos Corp.	No	200,000		Nil	Nil
8	7	7	15	9	68	12	900	7% non-cum pfd.	100	75,000		0.24	3.35
76	74	75	82	74	111	65	1,010	Can. Ind. Alcohol "A"	No	969,000	1.52	1.90	2.87
							3,238	Shawinigan W. & P.	No	2,178,000	2.50	2.35	2.17

## The Industry's Bonds

1930 May		1930		1929		In May	Sales During 1930	ISSUE	Date Due	Int. %	Int. Period	Author- ized \$
High	Low	High	Low	High	Low							
NEW YORK STOCK EXCHANGE												
105	103	105	102	106	103	45	314	Amer. Agric. Chem., 1st ref. s. f. 7½s.....	1941	7½	F. A.	30,000,000
99	97	100	96	99	99	65	463	Amer. Cyan. deb. 5s.....	1942	5	A. O.	5,000,000
107	105	107	100	135	95	637	2,785	Amer. I. G. Chem. conv. 5½s.....	1949	5½	M. N.	30,000,000
101	100	102	100	102	98	229	1,456	Am. Smelt & Ref. 1st. 5s. "A".....	1947	5	A. O.	38,000,000
98	93	98	83	100	79	350	965	Anglo-Chilean s. f. deb. 7s.....	1945	7	M. N.	16,500,000
102	101	103	100	103	99	76	426	Atlantic Refin. deb. 5s.....	1937	5	J. J.	15,000,000
103	102	104	100	103	98	20	185	By-Prod. Coke 1st 5½s. "A".....	1945	5½	M. N.	8,000,000
102	99	102	99	103	96	11	156	Corn Prod. Refin. 1st s. f. 5s.....	1934	5	M. N.	10,000,000
83	81	87	74	104	76	382	1,576	Lautaro Nitrate conv. 6s.....	1954	6	J. J.	
100	99	101	98	100	96	162	1,433	Pure Oil s. f. 5½% notes.....	1937	5½	F. A.	20,000,000
98	96	98	93	98	90	43	383	Solvay Am. Invest. 5s.....	1942	5	M. S.	
104	102	104	100	103	100	649	2,653	Standard Oil, N. J. deb. 5s.....	1946	5	F. A.	120,000,000
98	97	98	95	100	91	353	1,621	Standard Oil, N. Y. deb. 4½s.....	1951	4½	J. D.	50,000,000
101	100	102	97	110	88	51	500	Tenn. Copp. & Chem. deb. 6s. "B".....	1944	6	M. S.	5,000,000
NEW YORK CURB												
102	101	102	101	103	99	256,000	256,683	Aluminum Co., s. f. deb. 5s.....	1952	5	M. S.	60,000,000
100	98	100	97	98	97	199,000	199,500	Aluminum Ltd., 5s.....	1948	5	J. J.	20,000,000
93	92	100	92	125	99	6,000	6,129	Amer. Solv. & Chem. 6½s.....	1936	6½	M. S.	2,200,000
75	70	90	69	95	60	34,000	34,138	General Ind. Alc., 6½s.....	1944	6½	M. N.	2,500,000
78	73	80	57	95	60	78,600	78,932	General Rayon 6s. "A".....	1948	6	J. D.	5,400,000
102	100	103	99	101	97	184,000	184,384	Gulf Oil, 5s.....	1937	5	J. D.	35,000,000
103	101	103	100	100	93	94,000	94,342	Sinking Fund deb. 5s.....	1947	5	F. A.	35,000,000
100	99	100	95	100	93	20,400	21,031	Koppers G. & C. deb. 5s.....	1947	5	J. D.	25,000,000
95	94	95	90	94	88	143,000	143,447	Shawinigan W. & P. 4½s.....	1967	4½	A. O.	200,000,000
95	94	95	90	94	88	60,000	60,150	4½s., series "B".....	1968	4½	M. N.	25,000,000
101	101	106	97	100	97	21,000	21,185	Silica Gel Corp. 6½s.....	1932	6½	A. O.	1,700,000
101	100	101	100	102	97	145,000	145,804	Swift & Co., 5s.....	1944	5	J. J.	50,000,000
102	102	103	101	104	98	18,000	18,123	Westvaco Chlorine Prod. 5½s.....	1937	5½	M. S.	2,500,000



# ACETIC ACID ALL GRADES

*Manufactured by*  
KEYSTONE WOOD  
CHEMICAL AND  
LUMBER  
CORPORATION  
  
BARCLAY CHEMICAL  
COMPANY  
  
TIONESTA VALLEY  
CHEMICAL CO.

DELIVERIES IN  
CARBOYS  
BARRELS  
TANK-TRUCKS  
TANK-CARS



## OLEAN SALES CORP.

7-11 GETTY AVE.  
PATERSON, N. J.

803 W. 1st ST.  
CHARLOTTE, N. C.

50 BLANCHARD ST.  
LAWRENCE, MASS.

### Church & Dwight, Inc.

*Established 1846*

80 MAIDEN LANE

NEW YORK

Bicarbonate of Soda

Sal Soda

Monohydrate of Soda

*Standard Quality*

# The Trend of Prices

## Level of Business and Industry Shows Little Change in Month

**Chemical Business Fails to Show Improvement—Alkali Shipments Continue Good But Solvent Group is Generally Off—Calcium Chloride Ahead of Last Year—Copper Sulfate Demand Good.**

General industrial conditions have remained at about the same level during the past month, although seasonal declines have been registered in several industries. Production in basic industries in April was slightly larger than in March and the Federal Reserve Board's index, which makes allowance for the usual seasonal changes, shows an increase of about two per cent, offsetting a large part of the decrease in March.

Output of automobiles showed the usual seasonal expansion. Steel output declined seasonally in April and the early part of May. The output of silk textiles was considerably reduced, and woolen mills curtailed operations, though less than seasonally. Cotton mills were more active in April and there was some increase in stocks. In the first half of May, however, a program of curtailment was instituted in the industry, according to the Federal Reserve Board.

In comparison with the first four months of 1929, a year of exceptionally active business, production was smaller in almost all major branches of industry, with the exception of tobacco. In comparison with 1928, however, output was larger in the automobile, petroleum, and silk industries, slightly smaller in steel and coal, and considerably smaller in cotton and wool textiles, flour, meat packing, automobile tires, and lumber.

Building contracts awarded during April, according to the F. W. Dodge Corporation, were 6 per cent larger than in March, reflecting further expansion in awards for public works and utilities, and some increase in residential construction, largely seasonal in character. In the first two weeks in May there was a further increase in building activity. In comparison with 1929, awards in the first four months of the year were 17 per cent smaller, reflecting chiefly the continued small volume of residential building, which more than offset increases in public works and in utility construction.

Factory employment, which had been decreasing since last September, declined by about 1 per cent in April, which represents the usual development for that month, while the reduction in factory pay rolls from March to April was smaller than usual.

The value of foreign trade decreased further in April, and for the first four months of the year exports were about 20 per cent smaller than a year ago, when trade was exceptionally active. In part this decline reflected the lower level of wholesale prices.

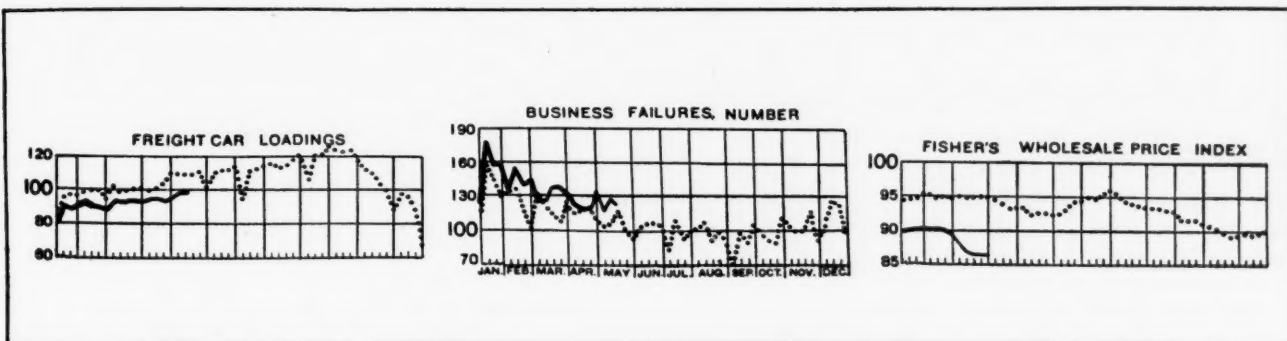
An increase in wholesale prices in the first week in April was followed by a substantial decline which continued into May and brought the level of prices to the lowest point in a number of years. Prices of important raw materials, such as wheat, cotton, and silk declined during most of the period, but steadied somewhat around the middle of May, while prices of silver, hides, and coffee were comparatively stable. There were fairly continuous price declines in steel, sugar, raw wool, and the textiles. Copper prices were reduced further early in May, but recovered somewhat following large purchases for domestic and foreign consumption.

Loans and investments of member banks increased by about \$160,000,000 in the latter half of April, but declined by almost that amount in the first two weeks in May, both movements reflecting chiefly fluctuations in loans on securities. Investments increased further, while "all other" loans continued to decline, and on May 14 at \$8,560,000,000 were the smallest since 1927.

The volume of reserve bank credit declined further by \$125,000,000 between the weeks ending April 19 and May 17, largely as a result of the addition of about \$65,000,000 to the stock of monetary gold and of a further substantial reduction in the volume of money in circulation, which reflected chiefly smaller volume of pay rolls and declines in retail prices. The system's holdings of bills declined, while United States securities and discounts for member banks showed little change.

Money rates on all classes of paper declined further in May. The discount rate of the Federal Reserve Bank of New York was reduced from  $3\frac{1}{2}$  to 3 per cent on May 2, and that at the Federal Reserve Bank of Boston from 4 to  $3\frac{1}{2}$  per cent on May 8.

Chemical business, generally speaking, has not as yet shown any signs of improvement over conditions existing earlier in the year. The alkali group continues to maintain a high volume of shipments, despite lessened demands from the textile and plate glass industries. In fact, the volume for May has been ahead of that of 1928 and only from 3 to 4 per cent below that of 1929. Seasonal items such as calcium chloride and copper sulfate have been moving in very heavy quantities, while ammonia, on the other hand, is far behind last year due to continued cool weather. Generally speaking, all those chemicals used as raw materials in the production of automobiles and textiles are lagging far behind, due to continued curtailed activities in this field. Little improvement is expected before the advent of the Fall season.



*Business indicators prepared by the Department of Commerce. The weekly average 1923-25 inclusive = 100  
The solid line represents 1930 and the dotted line 1929.*

# Prices Current

Heavy Chemicals, Coal-tar Products, Dye-and-Tan-stuffs, Colors and Pigments, Fillers and Sizes, Fertilizer and Insecticide Materials, Naval Stores, Fatty Oils, etc.

Chemical prices quoted are of American manufacturers for spot New York, immediate shipment, unless otherwise specified. Products sold f. o. b. works are specified as such. Imported chemicals are so designated. Resale stocks when a market factor are quoted in addition to makers' prices and indicated "second hands."

Oils are quoted spot New York, ex-dock. Quotations

f.o.b. mills, or for spot goods at the Pacific Coast are so designated.

Raw materials are quoted New York, f. o. b., or ex-dock. Materials sold f. o. b. works or delivered are so designated.

The current range is not "bid and asked," but are prices from different sellers, based on varying grades or quantities or both. Containers named are the original packages most commonly used.

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

**Acetone** — Conditions have remained about the same during the past month. With automobile and rayon production lagging behind, no very great improvement is to be expected in this market. No great stocks are in the hands of consumers, so that the renewal of activity generally expected in the Fall should be reflected immediately in this market.

**Acid Acetic** — Unsettled conditions continue in this market due to competition between the synthetic and the natural product. There are also rumors of new production now being contemplated which would add further complications to the present situation. Meantime supplies of both acid and acetate of lime are more than ample. Of course, wood distillers are gradually shutting down their plants in conformance with their seasonal custom, but in the meantime, stocks have continued to accumulate and are now unusually heavy. Production of acetate of lime during March amounted to 11,188,379 during March, as compared with 9,578,000 during February and with 12,396,000 during March of last year. Production for the first quarter aggregated 32,574,000 pounds, compared with 35,792,000 pounds during the same quarter of last year. Shipments during the first quarter, 16,561,297 pounds, as compared with 34,863,000 pounds during the same quarter of last year. Stocks at the end of March totaled 23,771,000 pounds, as compared with 20,719,000 pounds at the end of February and with 1,931,000 at the close of March last year.

**Acid Formic** — Imports of this material are steadily declining. For the first three months of this year they totaled only 123,746 pounds as compared with 526,336 pounds for the corresponding period of last year. This decline has been in progress for several years. Since 1927

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
.21	.18	.26	.18	Acetaldehyde, drs 1c-1 wks...lb.	.18	.21
.31	.27			Acetaldehyde, 50 gal dr...lb.	.27	.31
				Acetamide...lb.	1.20	1.35
.24	.21	.24	.23	Acetanilid, tech, 150 lb bbl...lb.	.21	.23
.35	.28	.35	.29	Acetic Anhydride, 92-95%, 100 lb clys...lb.	.25	.28
.32	.30			Acetin, tech drums...lb.	.30	.32
.16	.11	.15	.13	Acetone...lb.	.11	.12
1.25	1.15	1.75	1.65	Acetone Oil, bbls NY...gal.	1.15	1.25
.68	.45	.45	.42	Acetyl Chloride, 100 lb cby...lb.	.55	.68
				Acetylene Tetrachloride (see tetrachlorethane)...		
				<b>Acids</b>		
3.88	3.88	3.88	3.38	Acid Acetic, 28% 400 lb bbls c-1 wks...100 lb.	3.88	3.88
13.68	13.68	13.68	11.92	Glacial, bbl c-1 wk...100 lb.	13.68	13.68
1.00	.98	1.00	.98	Anthranilic, retd, bbls...lb.	.98	1.00
.80	.80	.80	.80	Technical, bbls...lb.	.80	.80
2.25	1.60	2.25	1.60	Battery, clys...100 lb.	1.60	2.25
.60	.51	.60	.57	Benzoic, tech, 100 lb bbls...lb.	.51	.53
.07	.05	.11	.08	Boric, crys. powd, 250 lb bbls...lb.	.07	.07
1.25	1.25	1.25	1.25	Broenner's, bbls...lb.	1.25	1.25
.90	.85	.90	.85	Butyric, 100% basis clys...lb.	.85	.90
5.25	4.85	4.85	4.85	Camphoric...lb.	5.25	5.25
.05	.04	.16	.15	Chlorosulfonic, 1500 lb drums wks...lb.	.04	.05
.23	.17	.30	.25	Chronic, 99%, drs extra...lb.	.16	.18
1.06	1.00	1.06	1.00	Chromotropic, 300 lb bbls...lb.	1.00	1.06
.70	.46	.44	.59	Citric, USP, crystals, 230 lb bbls...lb.	.46	.59
.59	.52	.97	.95	Cleve's, 250 lb bbls...lb.	.52	.54
.54	.60	.70	.68	Cresylic, 95%, dark drs NY...gal.	.55	.60
.77	.72	.72	.72	97-99%, pale drs NY...gal.	.60	.70
.12	.10	.12	.11	Formic, tech 90%, 140 lb cby...lb.	.10	.12
.12	.50	.55	.50	Gallie, tech, bbls...lb.	.50	.55
.55	.74	.74	.74	USP, bbls...lb.	.74	.74
.80	.74	1.06	1.00	Gamma, 225 lb bbls wks...lb.	.77	.80
.99	.80	.63	.57	H, 225 lb bbls wks...lb.	.65	.70
.72	.67	.67	.67	Hydriodic, USP, 10% soln cby lb.	.67	.67
.67				Hydrobromic, 48%, coml, 155 lb clys wks...lb.	.45	.48
.48	.45	.48	.45	Hydrochloric, CP, see Acid Muriatic...		
.90	.84	.90	.80	Hydrocyanic, cylinders wks...lb.	.80	.90
.06	.06	.06	.06	Hydrofluoric, 30%, 400 lb bbls wks...lb.	.06	.06
.11	.11	.11	.11	Hydrofluosilicic, 35%, 400 lb bbls wks...lb.	.11	.11
.85	.85	.85	.85	Hypophosphorous, 30%, USP, demijohns...lb.	.85	.85
.05	.04	.06	.04	Lactic, 22%, dark, 500 lb bbls lb.	.04	.05
.12	.11	.13	.12	44%, light, 500 lb bbls...lb.	.11	.12
.42	.40	.54	.52	Laurent's, 250 lb bbls...lb.	.40	.42
.60	.48	.60	.48	Malic, powd., kegs...lb.	.45	.60
.65	.60	.65	.60	Metanilic, 250 lb bbls...lb.	.60	.65
.07	.07	.08	.07	Mixed Sulfuric-Nitric tanks wks...N unit	.07	.07
.01	.008	.01	.01	tanks wks...S unit	.008	.01
.21	.18	.21	.18	Monochloroacetic, tech bbl...lb.	.18	.21
1.70	1.65	.65	.65	Monosulfonic, bbls...lb.	1.65	1.70
1.40	1.35	1.40	1.35	Muriatic, 18 deg, 120 lb clys c-1 wks...100 lb.	1.35	1.35
1.00	1.00			tanks, wks, 100 lb.	1.00	1.00
.95	1.40	1.80	1.70	20 degrees, clys wks...100 lb.	1.45	1.45
.59	.85	.95	.85	N & W, 250 lb bbls...lb.	.85	.95
5.00	5.00	5.00	5.00	Naphthionic, tech, 250 lb...lb.	Nom.	Nom.
6.00	6.00	6.00	6.00	Nitric, 36 deg, 135 lb clys c-1 wks...100 lb.	5.00	5.00
.11	.11	.11	.10	40 deg, 135 lb clys, c-1 wks...100 lb.	6.00	6.00
.14	.08	.08	.08	Oxalic, 300 lb bbls wks NY...lb.	.11	.11
.16	.14	.16	.16	Phosphoric 50%, U. S. P...lb.	.14	.14
.70	.65	.50	.50	Syrupy, USP, 70 lb drs...lb.	.14	.14
.50	.30	.50	.40	Commercial, tanks...Unit.	.80	.80
1.40	.86	.86	.86	Picramic, 300 lb bbls...lb.	.65	.70
.42	.33	.32	.27	Pieric, kegs...lb.	.30	.50
.16	.15	.16	.15	Pyrogallie, crystals...lb.	1.50	1.60
1.95	1.60	1.95	1.60	Salicylic, tech, 125 lb bbl...lb.	.33	.37
15.50	15.50			Sulfanilic, 250 lb bbls...lb.	.15	.16
1.65	1.50	1.37	1.20	Sulfuric, 66 deg, 180 lb clys 1c-1 wks...100 lb.	1.60	1.95
1.42	1.27	1.12	1.12	tanks, wks, ton	15.50	15.50
18.50	18.50	18.50	18.50	1500 lb dr wks...100 lb.	1.50	1.65
42.00	42.00	42.00	42.00	60°, 1500 lb dr wks...100 lb.	1.27	1.42
				Oleum, 20%, 1500 lb. drs 1c-1 wks...ton	18.50	18.50
				40%, 1c-1 wks net...ton	42.00	42.00

# CITRIC ACID

*"The Gold Medal Standard"*

The tart taste of the citrus fruits was familiar to the ancients, but Citric Acid itself was not discovered until 1784, when Carl Wilhelm Scheele isolated it from lemon juice. A number of years elapsed before commercial production was started.

Powers & Weightman of Philadelphia were the pioneer manufacturers in this country, and in the year 1875 the Franklin Institute awarded them the Cresson Medal "for the perfection of result in the product obtained." Powers & Weightman later became Powers-Weightman-Rosengarten Co., who in turn merged their interests with Merck & Co.

The skill and experience acquired in the manufacture of Citric Acid during 57 years of continuous operation, and the priceless tradition of upholding "the Gold Medal Standard", are now the heritage of MERCK & CO. INC.

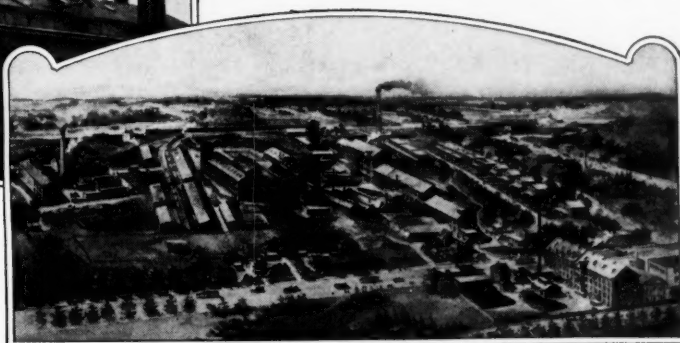
The plant at East Falls, Philadelphia, has been thoroughly modernized to meet the increasing demand of today.



The Elliott Cresson Gold Medal awarded in 1875 to Powers & Weightman (now Merck & Co. Inc.) "for the introduction of an industry new in the United States and perfection of result in the product obtained in the manufacture of Citric Acid."



The original building (above) at East Falls, where Citric Acid was first made in this country, and (right) the plant as it looks today.



## MERCK & CO. INC.

MANUFACTURING CHEMISTS

SUCCESSORS TO

POWERS-WEIGHTMAN-ROSENGARTEN CO.

Industrial Division:

P. O. Box 1625

Philadelphia

New York

RAHWAY, N. J.

St. Louis

In Canada:

MERCK & CO. LTD.

Montreal

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

there has been a steady decline. During that year, 3,219,892 pounds, valued at \$230,943 were imported. This declined to 2,253,840 pounds, valued at \$174,533, in 1928, and 1,386,608 pounds, valued at \$108,797 in 1929.

**Acid Oxalic** — A fair volume of business is reported as having prevailed during the past month. During the first three months of this year imports have totaled 167,000 pounds, which compares with 140,481 pounds during the corresponding period of 1929.

**Acid Sulfuric** — Demand has not been so active as previously reported due perhaps in large measure to the slackening of activities in the iron and steel industries. Demands from fertilizer manufacturers, never very high during the past season, has also begun to fall off in conformance with the natural tendency at this season of the year. Fertilizer plants produced 188,712 short tons of sulphuric acid during March, as compared with 191,778 tons in February and with 182,866 tons in March last year, according to reports to the Departments of Commerce by 80 concerns. These plants purchased, in addition, 26,942 short tons of acid from non-fertilizer producers, against 37,399 tons in February and 32,839 tons in March, 1929. Consumption in making fertilizers, including shipments to other fertilizer producers, 201,512 tons, against 220,234 tons and 196,438 tons. Shipments to other than fertilizer producers, 37,294 tons, against 32,779 tons and 39,497 tons. Stocks of acid at the close of March, 95,321 tons, against 95,905 tons and 108,541 tons. Imports of sulfuric acid for the first three months of this year totaled only 120,400 pounds, as compared with 1,087,259 pounds for the corresponding period of last year. During the same period, exports totaled 1,562,315 pounds as compared with 1,760,582 pounds for the same period of last year.

**Alcohol** — With the exception of the consolidation into one organization of three producers, thus reducing the number of important factors in the field, there has been nothing of note in this market during the past month. Conditions still continue competitive but there is prac-

1929		1928			Current Market		1930	
High	Low	High	Low		High	Low	High	Low
.40	.30	.40	.30	Tannic, tech, 300 lb bbls. .lb.	.30	.40	.40	.30
.38½	.38	.38	.34½	Tartaric, USP, crys, powd, 300 lb bbls. .lb.	.38	.38½	.38½	.38
.85	.85	.85	.85	Tobias, 250 lb bbls. .lb.	.85	.85	.85	.85
2.75	2.75	2.75	2.75	Trichloroacetic bottles. .lb.	2.75	2.75	2.75	2.75
2.00	2.00	2.00	2.00	Kegs. .lb.	2.00	2.00	2.00	2.00
2.25	1.00	1.25	1.00	Tungstic, bbls. .lb.	1.40	1.70	1.70	1.40
.47	.38	.55	.43	Albumen, blood, 225 lb bbls. .lb.	.38	.40	.40	.38
.20	.12			dark. .bbls, lb.	.12	.20	.20	.12
.83	.70	.84	.78	Egg, edible. .lb.	.70	.75	.75	.69
.80	.70	.80	.70	Technical, 200 lb cases. .lb.	.65	.70	.73	.65
.65	.60	.65	.60	Vegetable, edible. .lb.	.60	.65	.65	.60
.55	.50	.55	.50	Technical. .lb.	.50	.55	.55	.50
<b>Alcohol</b>								
.17½	.17½	.20	.18½	Alcohol Butyl, Normal, 50 gal	.17½	.18½	.18½	.17½
.18½	.17½	.19½	.18½	dra c-1 wks. .lb.	.17½	.18½	.18½	.17½
.17½	.16½	.19	.17½	Drums, 1-c-1 wks. .lb.	.17½	.18½	.18½	.17½
				Tank cars wks. .lb.	.16½	.17½	.17½	.16½
1.67	1.67	2.25	1.75	Amyl (from pentane)				
1.80	1.42	1.80	1.70	dra c-1 wks. .gal.	1.67	1.67	1.67	1.67
				Diacetone, 50 gal dra del. gal.	1.42	1.60	1.60	1.42
2.75	2.69½	3.70	2.65	Ethyl, USP, 190 pf, 50 gal				
.71	.71	.55	.50	bbls. .gal.	2.63	2.75	2.75	2.63
				Anhydrous, drums. .gal.	.56	.60	.71	.56
.52	.49	.52	.48½	Completely denatured, No. 1				
				188 pf, 50 gal dra drums				
.51	.48	.50	.43	extra. .gal.	.43	.45	.51	.43
.50	.46	.46	.41	No. 5, 188 pf, 50 gal dra				
1.30	1.00	1.25	1.00	drums extra. .gal.	.42	.44	.50	.42
1.00	1.00	1.00	1.00	Tank, cars. .gal.	.40	.42	.48	.40
.82	.80	.82	.80	Isopropyl, ref, gal dra. .gal.	.60	1.00	1.00	.60
				Propyl Normal, 50 gal dr. gal.	1.00	1.00	1.00	1.00
.65	.65	.65	.65	Aldehyde Ammonia, 100 gal dr lb.	.80	.82	.82	.80
.34	.32	.37	.35	Alpha-Naphthol, crude, 300 lb				
3.50	3.25	3.30	3.25	bbls. .lb.	.65	.65	.65	.65
5.50	5.00	5.50	5.25	Alpha-Naphthylamine, 350 lb				
3.50	3.00	3.20	3.10	bbls. .lb.	.32	.34	.34	.32
3.75	3.75	3.75	3.75	Alum Ammonia, lump, 400 lb				
24.30	24.30	26.00	24.30	bbls, 1c-1 wks. .100 lb.	3.30	3.50	3.50	3.30
.20	.05	.40	.35	Chrome, 500 lb casks, wks				
.18	.17	.18	.17	100 lb.	5.00	5.25	5.25	5.00
.26	.25	.24	.18	Potash, lump, 400 lb casks				
2.05	1.95	1.75	1.75	wks. .100 lb.	3.20	3.50	3.50	3.20
1.40	1.40	1.40	1.40	Soda, ground, 400 lb bbls				
1.15	1.15	1.15	1.15	wks. .100 lb.	3.75	3.75	3.75	3.75
				Aluminum Metal, c-1 NY, 100 lb.	24.30	24.30	24.30	24.30
.14½	.14	.14	.13½	Chloride Anhydrous. .lb.	.05	.15	.15	.05
.03½	.03½	.03	.03	Hydrate, 96%, light, 90 lb				
6.50	5.15			bbls. .lb.	.17	.18	.18	.17
.22	.21	.22	.21	Stearate, 100 lb bbls. .lb.	.24½	.25½	.26	.24½
.12	.09	.09	.08½	Sulfate, Iron, free, bags c-1				
5.15	4.45	5.15	4.45	wks. .100 lb.	1.95	2.05	2.05	1.95
5.75	5.25	5.75	5.25	Coml, bags c-1 wks. .100 lb.	1.40	1.40	1.40	1.40
.11½	.11	.11½	.11	Aminoazobenzene, 110 lb kegs lb.	1.15	1.15	1.15	1.15
.16	.15	.16	.15	<b>Ammonium</b>				
.10	.06	.10	.06	Ammonia, anhyd, 100 lb cyl. .lb.	.15½	.15½	.15½	.15½
.34	.26	.38	.27	Water, 26", 800 lb dr del. .lb.	.03½	.03½	.03½	.03½
.13	.12½	.18	.18	Acetate. .lb.	.28	.39	.39	.28
2.40	2.05	2.90	2.20	Bicarbonate, bbls., f.o.b. plant				
2.45	2.05	3.00	2.50	100 lb.	5.15	5.15	5.15	5.15
60.85	52.40	60.85	60.85	Bifluoride, 300 lb bbls. .lb.	.21	.22	.22	.21
.48	.36	.60	.55	Carbonate, tech, 500 lb cs. .lb.	.09	.12	.12	.09
1.70	1.60	2.25	1.72	Chloride, white, 100 lb bbls				
.24	.23			wks. .100 lb.	4.45	5.15	5.15	4.45
.16½	.15	.16½	.15½	Gray, 250 lb bbls wks. .lb.	5.25	5.75	5.75	5.25
.37	.34	.48	.41	Lump, 500 lb cks spot. .lb.	.11	.11½	.11½	.11
.90	.80	1.00	.90	Lactate, 500 lb bbls. .lb.	.15	.16	.16	.15
.10	.08½	.12	.09½	Nitrate, tech, casks. .lb.	.06	.10	.10	.06
.10	.09	.12	.10	Nitrate, 112 lb kegs. .lb.	.26	.30	.30	.26
.18	.13	.18	.17	Phosphate, tech, powd, 325 lb				
.10	.08½	.12	.09½	bbls. .lb.	.11½	.12	.13	.11½
.26	.24			Sulfate, bulk c-1. .100 lb.	2.00	2.10	2.10	2.00
.20	.16	.20	.16	Southern points. .100 lb.	2.05	2.10	2.10	2.05
.42	.38	.42	.38	Nitrate, 26% nitrogen				
.19	.17	.19	.17	31.6% ammonia imported				
.14	.12	.14	.12	bags c. i. f. .ton	57.60	57.60	57.60	57.60
.16	.12	.16	.15	Sulfocyanide, kegs. .lb.	.36	.48	.48	.36
.18½	.18½	.16	.15	Amyl Acetate, (from pentane)				
.08	.08	.08	.08	dra. .lb.	.222	.236	.236	.222
				Tech, dra. .lb.	.23	.24	.24	.23
.11	.09	.11	.10	Alcohol, see Fusel Oil. .lb.				
.04½	.04	.04	.03½	Furoate, 1 lb tins. .lb.	5.00	5.00	5.00	5.00
15.00	4.75	14.75	14.75	Aniline Oil, 960 lb dra. .lb.	.15	.16	.16	.15
				Annatto, fine. .lb.	.34	.37	.37	.34
				Anthraquinone, sublimed, 125 lb				
				bbls. .lb.	.50	.55	.90	.50
				Antimony, metal slabs, ton lots				
				lb.	.07½	.09½	.09½	.07½
				Needle, powd, 100 lb cs. .lb.	.09	.09½	.09½	.09
				Chloride, soln (butter of)				
				ebys. .lb.	.13	.17	.17	.13
				Oxide, 500 lb bbls. .lb.	.08	.08½	.08½	.08
				Salt, 66% tins. .lb.	.24	.24	.24	.24
				Sulfuret, golden, bbls. .lb.	.16	.20	.20	.16
				Vermilion, bbls. .lb.	.38	.42	.42	.38
				Archil, cone, 600 lb bbls. .lb.	.17	.19	.19	.17
				Double, 600 lb bbls. .lb.	.12	.14	.14	.12
				Triple, 600 lb bbls. .lb.	.12	.14	.14	.12
				Argols, 80% casks. .lb.	.18½	.18½	.18½	.18½
				Crude, 30% casks. .lb.	.08	.08	.08	.08
				Aroclors, wks. .lb.	.20	.40	.40	.20
				Arsenic, Red, 224 lb kegs, cs. .lb.	.08½	.09½	.11	.08½
				White, 112 lb kegs. .lb.	.04	.04½	.04½	.04
				Asbestine, c-1 wks. .ton	15.00	15.00	15.00	15.00

# For Uniformity

*Standardize on du Pont Organic Chemicals*

**NITROBENZENE**

**ANILINE**

**DIMETHYLANILINE**

**DIPHENYLAMINE**

CONTINUOUS and constantly increasing production yields intermediates that are always uniform in quality and of the highest commercial purity. This is particularly true of Nitrobenzene (Oil of Mirbane) and its derivatives: Aniline, Dimethylaniline, and Diphenylamine . . . all of which have been manufactured by us in large quantities since the beginning of the Great War. You can safely standardize on du Pont Organic Chemicals for any purpose.



E. I. DU PONT DE NEMOURS & COMPANY, INCORPORATED

*Intermediates Section*

*Wilmington, Delaware*

# **Organic Chemicals**

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

tically no demand and as a result the general tone is very quiet and inactive. Most of the production is sold well ahead and no new business is in prospect at the present time.

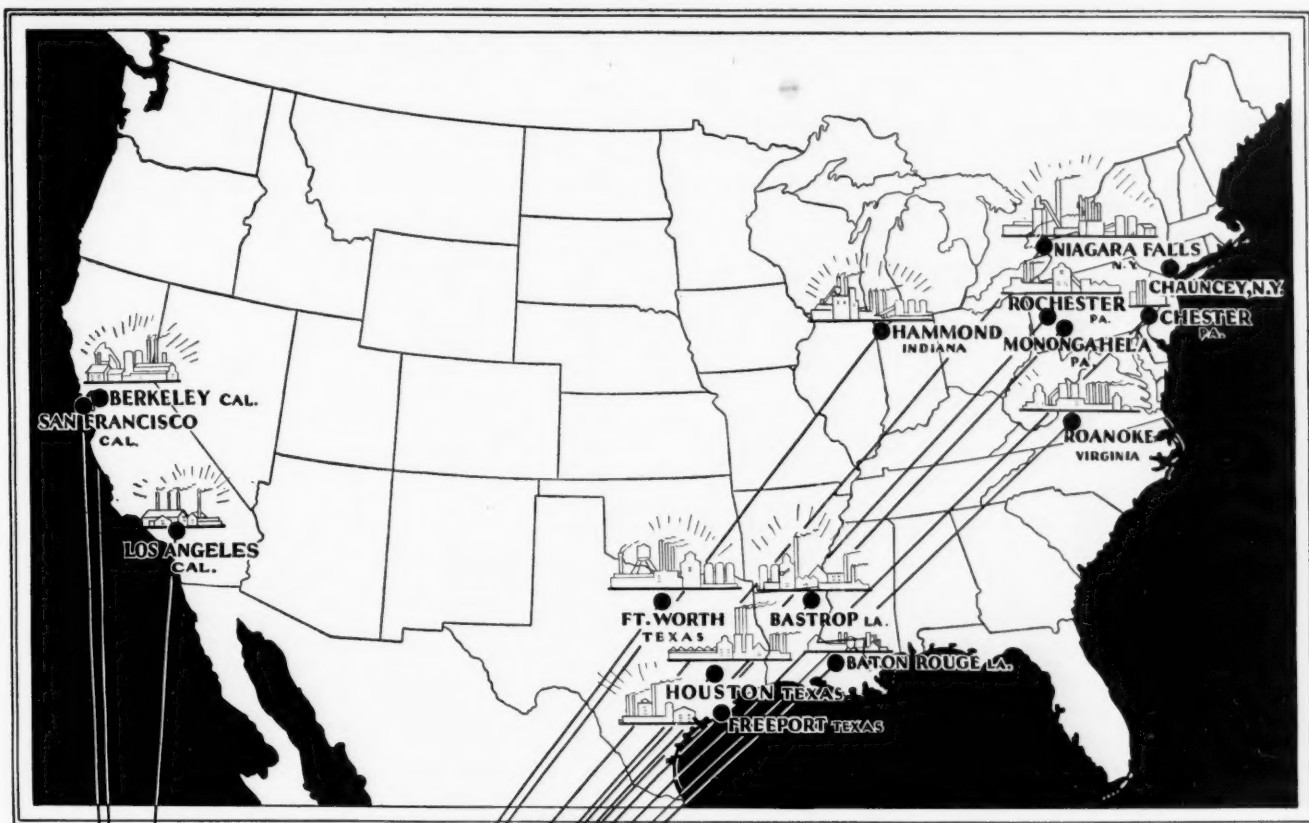
**Aluminum** — Production of aluminum salts in the United States in 1929 was 394,093 tons, valued at \$11,677,728 as compared with 386,905 short tons, valued at \$13,990,264 in 1928. Makers of aluminum slates consumed 80,024 long tons of domestic bauxite and 62,320 tons of imported bauxite, a total of 142,344 tons, valued at \$1,912,576 at consuming works. There were also consumed 402 short tons of aluminum and 3,950 tons of alumina hydrate in the manufacture of the salts. Exports of aluminum sulfate from the United States in 1929 were 3,950 short tons valued at \$607,757. Productions of aluminum salts in the United States during 1929 included 5,108 tons ammonia alum; 15,005 tons sodium alum; 2,399 tons liquid aluminum chloride; 365 tons crystal aluminum chloride; 13,787 tons anhydrous aluminum chloride; 319,736 tons of general commercial aluminum sulfate; and 20,441 tons of iron-free aluminum sulfate.

**Ammonia** — Demand has been very sporadic for the anhydrous material due to the generally prevailing low temperatures for this season of the year. Until warmer weather definitely sets in, conditions in this market cannot be expected to improve. Shipments at present are off about 25 per cent for this season of the year. Aqua is reported to be in fair condition despite smaller consumption by the silk and rayon industries. The market generally is firm and strong at all points.

**Ammonium Chloride** — Continues to show a gradual falling off in demand as electrified radio makes itself more apparent. The market continues firm at all points.

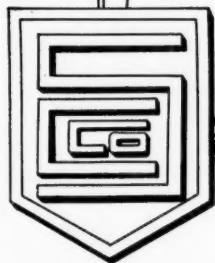
**Ammonium Sulfate** — In common with the entire fertilizer group. The market for this material has shown in creasing weakness during the past month. Producers and sellers are all carrying unusually heavy stocks and in an effort to dispose of these before the advent of the new season, prices have been lowered and strenuous efforts made to clean up these

1929		1928		Current Market	1930			
High	Low	High	Low		High	Low		
Barium								
Barium Carbonate, 200 lb bags								
60.00	57.00	57.00	47.00	wks. .... ton	58.00	60.00	60.00	58.00
.15	.14	.12	.12	Chlorate, 112 lb kegs NY. lb.	.14	.15	.15	.14
69.00	63.00	65.00	54.00	Chloride, 600 lb bbl wks. ton	63.00	69.00	69.00	63.00
.13	.12	.13	.13	Dioxide, 88%, 690 lb drs. lb.	.12	.13	.13	.12
.05	.04	.04	.04	Hydrate, 500 lb bbls. lb.	.04	.05	.05	.04
.08	.08	.08	.07	Nitrate, 700 lb casks. lb.	.08	.08	.08	.08
Barytes, Floated, 350 lb bbls								
24.00	23.00	24.00	23.00	wks. .... ton	23.00	24.00	24.00	23.00
8.00	5.00	8.00	5.00	Bauxite, bulk, mines. .... ton	5.00	8.00	8.00	5.00
.37	.34	.38	.36	Beeswax, Yellow, crude bags. lb.	.32	.34	.34	.32
.42	.39	.43	.41	Refined, cases. .... lb.	.37	.38	.38	.37
.53	.51	.58	.56	White, cases. .... lb.	.50	.53	.53	.50
Benzaldehyde, technical, 945 lb								
.65	.60	.70	.65	drums wks. .... lb.	.60	.65	.65	.60
Benzene								
Benzene, 90%, Industrial, 8000								
.23	.23	.23	.21	gal tanks wks. .... gal.	.21	.22	.22	.21
.23	.23	.23	.21	Ind. Pure, tanks works. .... gal.	.21	.22	.22	.21
Benzidine Base, dry, 250 lb								
.74	.70	.74	.70	bbls. .... lb.	.65	.67	.74	.65
1.00	1.00	1.00	1.00	Benzoyl, Chloride, 500 lb drs. lb.	1.00	1.00	1.00	1.00
.25	.25	.25	.25	Benzyl, Chloride, tech drs. lb.	.25	.25	.25	.25
.26	.22	.26	.24	Beta-Naphthol, 250 lb bbl wk. lb.	.22	.24	.24	.22
Naphthylamine, sublimed, 200								
1.35	1.35	1.35	1.35	lb bbls. .... lb.	1.35	1.35	1.35	1.35
.68	.60	.65	.63	Tech, 200 lb bbls. .... lb.	.53	.65	.65	.53
90.00	75.00	90.00	80.00	Blanc Fixe, 400 lb bbls wks. ton	75.00	90.00	90.00	75.00
Bleaching Powder								
Bleaching Powder, 300 lb drs								
2.25	2.00	2.25	2.25	c-1 wks contract. .... 100 lb.	2.00	2.35	2.35	2.00
4.60	3.90	5.25	4.65	Blood, Dried, fob, NY. .... Unit	.35	3.65	3.90	3.65
5.00	4.40	5.35	4.75	Chicago. .... Unit	.40	4.00	4.50	4.00
4.70	4.25	5.05	4.50	S. American shipt. .... Unit	.60	3.60	4.10	3.50
Blues, Bronze Chinese Milori								
.35	.32	.35	.31	Prussian Soluble. .... lb.	.35	.35	.35	.35
42.00	39.00	30.00	29.00	Bone, raw, Chicago. .... ton	39.00	39.00	39.00	39.00
.07	.06	.07	.06	Bone, Ash, 100 lb kegs. .... lb.	.06	.07	.07	.06
.08	.08	.08	.08	Black, 200 lb bbls. .... lb.	.08	.08	.08	.08
35.00	30.00	37.00	31.00	Meal, 3% & 50%, Imp. .... ton	31.00	31.00	31.00	31.00
.03	.02	.05	.24	Borax, bags. .... lb.	.02	.03	.03	.02
.14	.10	.12	.10	Bordeaux, Mixture, 16% pwd. lb.	.12	.14	.14	.12
.14	.10	.10	.08	Paste, bbls. .... lb.	.12	.14	.14	.12
28.00	26.00	28.00	26.00	Brazilwood, sticks, shpmt. .... lb.	26.00	28.00	28.00	26.00
Bromine, cases. .... lb.								
1.20	.60	1.20	.60	Bronze, Aluminum, powd blk. lb.	.60	1.20	1.20	.60
1.25	.55	1.25	.55	Gold bulk. .... lb.	.55	1.25	1.25	.55
Butyl, Acetate, normal drs. .... lb.								
.195	.184	1.60	1.40	..... lb.	.192	.198	.20	.189
.186	.181	1.55	1.35	Tank, wks. .... lb.	.186	.186	.186	.186
.70	.34	.70	.70	Aldehyde, 50 gal drs wks. lb.	.34	.44	.44	.34
Carbitol s ee Diethylene Glycol								
Mono (Butyl Ether) ....								
Cellosolve (see Ethylene glycol								
mono butyl ether) ....								
.50	.50	.....	.....	Furoate, tech., 50 gal. dr., lb.	.50	.50	.50	.50
.36	.25	.36	.34	Propionate, drs. .... lb.	.25	.27	.27	.25
.60	.25	.60	.60	Stearate, 50 gal drs. .... lb.	.25	.30	.30	.25
.60	.57	.60	.57	Tartrate, drs. .... lb.	.57	.60	.60	.57
1.75	.75	2.00	1.35	Cadmium, Sulfide, boxes .... lb.	.90	1.40	1.75	.90
Calcium								
Calcium, Acetate, 150 lb bags								
4.50	4.50	4.50	3.50	c-1. .... 100 lb.	4.50	4.50	4.50	4.50
.09	.07	.09	.06	Arsenate, 100 lb bbls c-1	.07	.09	.09	.07
.06	.05	.06	.05	wks. .... lb.	.05	.06	.06	.05
Carbide, drs. .... lb.								
1.00	1.00	1.00	1.00	Carbonate, tech, 100 lb bags	1.00	1.00	1.00	1.00
c-1. .... lb.								
25.00	22.75	27.00	25.00	Chloride, Flake, 375 lb drs	22.75	22.75	22.75	22.75
c-1 wks. .... ton								
20.00	20.00	23.00	20.00	Solid, 650 lb drs c-1 fob wks	20.00	20.00	20.00	20.00
52.00	42.00	52.00	52.00	..... ton	42.00	43.00	43.00	42.00
1.25	1.25	.....	.....	Nitrate, 100 lb bags. .... ton	1.25	1.25	1.25	1.25
.08	.07	.08	.07	Peroxide, 100 lb. drs. .... lb.	.08	.08	.08	.08
.26	.25	.....	.....	Phosphate, tech, 450 lb bbls lb.	.25	.28	.28	.25
88.15	82.15	.....	.....	Stearate, 100 lb bbls. .... lb.	88.65	88.65	88.65	88.65
.18	.18	.18	.18	Calurea, bags S. points. c.i.f. ton	.18	.18	.18	.18
.24	.22	.28	.22	Camwood, Bark, ground bbls. lb.	.18	.20	.20	.18
Candelilla Wax, bags. .... lb.								
Carbitol, (See Diethylene Glycol								
Mono Ethyl Ether) ....								
Carbon, Decolorizing, 40 lb bags								
.15	.08	.15	.08	c-1. .... lb.	.15	.15	.15	.08
.12	.12	.12	.12	Black, 100-300 lb cases 1c-1	.12	.12	.12	.12
NY. .... lb.								
.06	.05	.06	.05	Bisulfide, 500 lb drs 1c-1	.05	.06	.06	.05
.06	.06	.06	.06	NY. .... lb.	.06	.06	.06	.06
.07	.06	.07	.07	Dioxide, Liq. 20-25 lb cyl. lb.	.06	.06	.06	.06
.43	.35	.58	.45	Tetrachloride, 1400 lb drs	.06	.07	.07	.06
.40	.33	.60	.40	delivered. .... lb.	.34	.37	.37	.32
.32	.28	.38	.34	Carnauba Wax, Flor, bags. .... lb.	.31	.33	.33	.30
.36	.31	.56	.38	No. 1 Yellow, bags. .... lb.	.26	.27	.27	.26
.25	.24	.32	.25	No. 2 N Country, bags. .... lb.	.28	.29	.30	.28
.26	.24	.32	.25	No. 2 Regular, bags. .... lb.	.22	.23	.23	.22
.17	.15	.18	.14	No. 3 N. C. .... lb.	.22	.23	.23	.22
No. 3 Chalky. .... lb.								
Casein, Standard, ground. .... lb.								



## *A Nation-Wide "Hook-up"*

... that guarantees our customers prompt delivery ... any quantity, any place, any time.



BORAX  
CARBON TETRA CHLORIDE  
CREAM OF TARTAR  
CAUSTIC SODA  
CARBON BISULPHIDE  
NITRO CELLULOSE  
SULFUR (GROUND-REFINED)

ACIDS  
BORIC  
BATTERY  
MURIATIC  
NITRIC  
SULFURIC  
TARTARIC

# STAUTTER CHEMICAL COMPANY

NEW YORK, N.Y. ~~~ CHICAGO, ILL.  
2601 GRAYBAR BLDG. CARBIDE & CARBON BLDG.

HOUSTON, TEX. ~~~ SAN FRANCISCO, CAL. ~~~ LOS ANGELES, CAL.  
713 PETROLEUM BLDG. 624 CALIFORNIA STREET RIVES-STRONG BLDG.

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

stocks. Prices are at \$2.00 per 100 lbs., which marks an extremely low level for this material. No tendencies towards increased activity have been noticed despite the lower prices.

**Antimony** — Quiet conditions have prevailed in this market throughout the entire month and prices have declined to a basis of 7 $\frac{3}{4}$ c lb. for metal and 8c lb. for oxide. The Chinese market is reported as being in much easier position and at present material for future delivery is quoted at lower levels than the spot market.

**Beeswax** — Stocks of this material have been accumulating very rapidly and are at present very heavy. This has been aggravated by unusually heavy imports and a total lack of consuming demand. As a result prices have declined in a very weak market to a basis of 32c lb. for crude yellow, 37c lb. for refined yellow, and 50c lb. for white.

**Blood** — This market has been very dull during the past month. There has been a total lack of buying interest and stocks have been accumulating rapidly. As a result, prices have declined at all points, so that quotations are at \$3.65 per unit in New York, \$4.00 per unit in Chicago, and \$3.60 per unit South American.

**Calcium Acetate** — Despite the fact that wood distillers are gradually shutting down their plants as is usual at this season of the year, stocks of this material continue to accumulate in the face of extremely slack demand. Production of acetate of lime during March amounted to 11,188,379 pounds as compared with 9,587,000 pounds during February and with 12,396,000 pounds during March of last year. Production for the first three months aggregated 32,574,000 pounds as compared with 35,792,000 pounds during the corresponding period of last year. The poor demand which has prevailed for this material is emphasized by the figures on shipments during this period. Shipments during the first quarter amounted to only 16,561,297 pounds as compared with 34,863,000 pounds shipped during the same period of 1929. The poor demand has also resulted in a most heavy accumulation of stocks. Stocks at the

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
Cellosolve (see Ethylene glycol mono ethyl ether).....						
Acetate (see Ethylene glycol mono ethyl ether acetate).....						
.30	.20	.30	.26		.20	.20
.20	.18	.20	.18	.18	.20	.18
.32	.15	.32	.30		.15	.15
1.25	1.20	1.40	1.40	1.10	1.25	1.10
.03 $\frac{1}{2}$	.03	.03 $\frac{1}{2}$	.03	.03	.03 $\frac{1}{2}$	.03
.03 $\frac{1}{2}$	.02	.04 $\frac{1}{2}$	.04 $\frac{1}{2}$	.02	.03 $\frac{1}{2}$	.02
.03 $\frac{1}{2}$	.02 $\frac{1}{2}$	.03	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.03 $\frac{1}{2}$	.02 $\frac{1}{2}$
.19	.18	.19	.18	.18	.19	.18
.06 $\frac{1}{2}$	.06	.06 $\frac{1}{2}$	.06	.06	.06 $\frac{1}{2}$	.06
.05	.04	.05	.04	.04	.05	.04
.02	.03	.03	.02	.02	.03	.02
.02 $\frac{1}{2}$	.01 $\frac{1}{2}$	.02	.01 $\frac{1}{2}$	.01 $\frac{1}{2}$	.02 $\frac{1}{2}$	.01 $\frac{1}{2}$
.04 $\frac{1}{2}$	.04	.04 $\frac{1}{2}$	.04 $\frac{1}{2}$	.04	.04 $\frac{1}{2}$	.04
.06	.05 $\frac{1}{2}$	.06	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.06	.05 $\frac{1}{2}$
9.00	8.00	9.00	8.00	8.00	9.00	8.00
.02	.01 $\frac{1}{2}$	.02	.01 $\frac{1}{2}$	.01 $\frac{1}{2}$	.02	.01 $\frac{1}{2}$
12.00	10.00	12.00	10.00	10.00	12.00	10.00
25.00	15.00	25.00	15.00	15.00	25.00	15.00
.03 $\frac{1}{2}$	.01 $\frac{1}{2}$	.03 $\frac{1}{2}$	.03	.01 $\frac{1}{2}$	.03	.01 $\frac{1}{2}$
Chlorine						
Chlorine, cys 1c-1 wks contract						
.08 $\frac{1}{2}$	.07	.09	.08	.07 $\frac{1}{2}$	.08 $\frac{1}{2}$	.07 $\frac{1}{2}$
.04 $\frac{1}{2}$	.04 $\frac{1}{2}$			.04 $\frac{1}{2}$	.04 $\frac{1}{2}$	.04 $\frac{1}{2}$
.03	.025	.03 $\frac{1}{2}$	.03 $\frac{1}{2}$	.025	.025	.025
.10 $\frac{1}{2}$	.08 $\frac{1}{2}$	.07	.07	.10	.10 $\frac{1}{2}$	.10
.20	.16	.22	.20	.15	.16	.15
1.35	1.00	1.35	1.00	1.00	1.35	1.00
.29	.26	.29	.26	.26	.29	.26
.11	.06 $\frac{1}{2}$	.11	.06 $\frac{1}{2}$	.06 $\frac{1}{2}$	.11	.06 $\frac{1}{2}$
.18	.15	.17	.15 $\frac{1}{2}$	.17	.18	.17
.05 $\frac{1}{2}$	.04 $\frac{1}{2}$	.05 $\frac{1}{2}$	.04 $\frac{1}{2}$	.04 $\frac{1}{2}$	.05 $\frac{1}{2}$	.04 $\frac{1}{2}$
.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$
.28	.27	.28	.27	.27	.28	.27
.35 $\frac{1}{2}$	.34	.35 $\frac{1}{2}$	.34 $\frac{1}{2}$	.34 $\frac{1}{2}$	.35 $\frac{1}{2}$	.34 $\frac{1}{2}$
10.50	10.00	9.50	9.00	10.00	10.50	10.00
2.22	2.10	2.22	2.10	2.10	2.22	2.10
1.01	.95	.87	.84	.95	1.01	.95
.95	.95	.86	.86		.95	.95
Copper						
24.00	17.00	17.00	12.90		13.00	17.78
.25	.13	.17 $\frac{1}{2}$	.16	.10	.18 $\frac{1}{2}$	.21 $\frac{1}{2}$
.28	.25	.28	.28	.25	.28	.25
.60	.44	.50	.48	.44	.45	.44
.32	.16 $\frac{1}{2}$	.17	.16 $\frac{1}{2}$	.24	.32	.24
.19	.18	.19	.18	.18	.19	.18
7.00	5.50	5.50	5.05		4.75	5.50
14.00	13.00	14.00	13.00	13.00	14.00	13.00
.42	.40	.42	.40	.40	.42	.40
.....	.....	.....	.....	.....	.....	.....
38.00	37.50	38.00	36.00	37.50	38.00	37.50
.28	.26 $\frac{1}{2}$	.27 $\frac{1}{2}$	.26	.26 $\frac{1}{2}$	.27	.26 $\frac{1}{2}$
.42	.40 $\frac{1}{2}$	.42	.40	.40	.42	.40
.19	.15	.19	.17	.15	.16	.15
.23	.13	.23	.21	.13	.14	.13
.28	.13	.28	.25	.13	.14	.13
.17	.14	.20	.17 $\frac{1}{2}$	.14	.17	.14
.36	.32			.32	.36	.32
.17	.16	.17	.16	.16	.17	.16
.16	.12 $\frac{1}{2}$	.18 $\frac{1}{2}$	.18 $\frac{1}{2}$	.12 $\frac{1}{2}$	.13	.12 $\frac{1}{2}$
.08 $\frac{1}{2}$	.08	.07	.06 $\frac{1}{2}$	.08	.08 $\frac{1}{2}$	.08
2.00	2.00	1.75	1.67 $\frac{1}{2}$		2.00	2.00
4.92	4.62	5.12	3.77	4.52	4.72	4.82
4.87	4.57	5.07	3.72	4.47	4.67	4.77
.09	.08	.09	.08	.08	.09	.08
.09	.08	.09	.08	.08	.09	.08
.08 $\frac{1}{2}$	.08	.08 $\frac{1}{2}$	.08	.08	.08 $\frac{1}{2}$	.08
3.80	3.80	3.80	3.80		3.80	3.80
3.10	2.70	2.90	2.85		2.70	2.70
.26 $\frac{1}{2}$	.26 $\frac{1}{2}$	.28	.26 $\frac{1}{2}$	.25 $\frac{1}{2}$	.28	.25 $\frac{1}{2}$
.31	.29 $\frac{1}{2}$	.31 $\frac{1}{2}$	.29 $\frac{1}{2}$	.29 $\frac{1}{2}$	.31 $\frac{1}{2}$	.29 $\frac{1}{2}$
.13	.05			.05	.07	.05
.65	.55	.65	.55	.55	.65	.55
3.00	2.75	.25	.23	2.75	3.00	2.75
1.90	1.85	2.15	2.15	1.85	1.90	1.85
.60	.55	2.00	1.85	.55	.60	.55
.13	.10	.60	.55	.11	.13	.10
.15	.13	.15	.10	.13	.15	.13
.30	.25	.35	.25	.28	.30	.28
.15	.13					
.22	.15			.15	.18	.15
.50	.50				.50	.50
.67	.64	.67	.64	.64	.67	.64
.26	.24	.26	.24	.24	.26	.24
.35	.30	.35	.30	.30	.35	.30
2.62	2.62	2.62	2.62		2.62	2.62
.32	.26	.32	.30	.26	.28	.26
Chemical Markets						

# ETHER

Concentrated  
U. S. P.  
Motor  
Commercial

Other AMER-SOL Products  
—Controlled, Tested and Proven  
for Quality and Uniformity

ETHYL ALCOHOL  
(Pure and Denatured)  
ETHYL ALCOHOL, ANHYDROUS  
(Pure and Denatured)  
ANTI-FREEZE ALCOHOL  
(Completely Denatured, Formula No. 5)  
DIETHYL PHTHALATE  
COLLODION  
AMMONIUM IODIDE, U. S. P.  
POTASSIUM IODIDE, U. S. P.  
SODIUM IODIDE, U. S. P.  
TINCTURE OF IODINE, U. S. P.  
IODINE, RESUBLIMED

*Information concerning any of the products of this  
Company can be readily obtained from any of our  
Sales Offices or from our Executive Offices.*



AMERICAN  
SOLVENTS & CHEMICAL  
CORPORATION

*Executive Offices:*

122 East 42nd Street, (Chanin Building)  
New York City

*Plants:*

Everett, Mass. Harvey, La. New Orleans, La.  
Agnew, Cal. Albany, N. Y. Chicago, Ill.

*Sales Offices and Warehouses throughout the country*

## EASTMAN Organic Chemicals

*for your*

### Analytical Laboratory

ARE your laboratories making the fullest use of the improved methods in analytical procedure made possible through the adoption of organic reagents?

Nearly every month some new method appears, shortening the time or improving the accuracy of the older routine determinations. You will profit when hours are saved in obtaining information that requires but a few minutes with up-to-date methods.

The Eastman List of 2600 Organic Chemicals contains most of the newer reagents which are rapidly and surely proving their worth.

*Write today for List No. 21*

Eastman Kodak Company  
Chemical Sales Department  
Rochester, N. Y.

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

close of March were 23,771,000 pounds, as compared with 20,719,000 pounds at the end of February and with 1,931,000 pounds at the close of March of last year.

**Calcium Chloride** — Shipments of this material are setting a new record pace and for the past month have been about forty-five per cent ahead of shipments for May 1929. Most of this is accounted for by increasing use of this chemical in road-work.

**Carnauba Wax** — The announcement of higher prices in the primary market had no effect upon the demand in this market where hand to mouth buying has prevailed. Buyers refused to be stampeded by the news from Brazil and as a result conditions there eased off. Prices in this market have been steady and unchanged.

**Chlorine** — Continued lack of demand from the paper and textile industries maintains this material in rather poor position. Stocks are quite heavy and there is no indication of any improvement in the near future. At present, the paper industry is able to purchase bleached pulp at a lower cost than it would take to secure the unbleached and prepare it with chlorine.

**Copper Sulfate** — Continued accumulation of copper stocks resulted in a further decline in the metal price early in the past month. This was followed by a reduction in the price of blue vitriol to \$4.50 per 100 pounds. However, this reduction did not prevail for any length of time due to the fact that the sulfate is in very strong position. This is the heaviest buying season, so despite the weak position of the metal, the sulfate price was advanced to \$4.75 per 100 pounds later in the month. In spite of this, orders and shipments continue to increase reaching the largest totals of the year. Shipments for May will probably equal or perhaps exceed those of the same month of last year. This is due to the fact that buying earlier in the year was far below normal and there is much to be made up now that demand has fully set in. United States imports of copper sulfate amounting to 2,700 short tons valued at \$273,000, advanced during 1929 50 per cent in quantity and 37 per cent in value over 1928. Germany was the chief source of supply furnishing 2,359 tons

1929		1928			Current Market		1930	
High	Low	High	Low		High	Low	High	Low
.50	.45	.50	.45	Dimethylsulfate, 100 lb drs. .lb.	.45	.50	.50	.45
.16½	.15	.16½	.15½	Dinitrobenzene, 400 lb bbls. .lb.	.15½	.16½	.16½	.15½
.15	.1	.16	.15	Dinitrochlorobenzene, 400 lb bbls. .lb.	.13	.15	.15	.13
.37	.34	.34	.32	Dinitronaphthalene, 350 lb bbls. .lb.	.34	.37	.37	.34
.32	.31	.32	.31	Dinitrophenol, 350 lb bbls. .lb.	.31	.32	.32	.31
.19	.17	.19	.18	Dinitrotoluene, 300 lb bbls. .lb.	.16	.17	.18	.16
.49	.42	.90	.48	Diorthotolylguanidine, 275 lb bbls wks. .lb.	.42	.46	.46	.42
.50	.40			Dioxan (See Diethylene Oxide) .lb.	.30	.40	.50	.30
.47	.40	.47	.45	Diphenylamine .lb.	.40	.40	.40	.40
.40	.39	.72	.40	Diphenylguanidine, 100 lb bbl lb.	.30	.35	.35	.30
.30	.26	.30	.26	Dip Oil, 25%, drumr. .lb.	.26	.30	.30	.26
57.00	46.50	62.00	58.00	Divi Divi pods, bgs shipmt. .ton	35.00	46.50	46.50	35.00
.05½	.05	.05½	.05	Extract .lb.	.05	.05½	.05½	.05
.84	.77	.82	.73	Egg Yolk, 200 lb cases. .lb.	.72	.75	.80	.72
1.90	1.70	1.75	1.7	Epsom Salt, tech, 300 lb bbls c-1 NY. .100 lb.	1.70	1.90	1.90	1.70
.39	.38	.38	.37	Ether, USP, 600 lb. drs. .lb.	.14	.14	.14	.14
.122	.108	1.05	.75	Anhydrous, C.P. 300 lb. drs. lb.	.40	.40	.40	.40
.129	.111	1.25	1.10	Ethyl Acetate, 85% Ester, tanks. .lb.	.115	.115	.115	.115
.68	.65			drums. .lb.	.121	.127	.158	.121
1.11	1.05	1.11	1.05	Anhydrous, tanks. .lb.	.149	.156	.156	.149
.55	.50	.70	.70	drums. .lb.	.65	.68	.68	.65
1.90	1.85			Acetoacetate, 50 gal drs. .lb.	1.05	1.11	1.11	1.05
.22	.22	.22	.22	Benzylaniline, 300 lb drs. .lb.	.50	.55	.55	.50
.40	.35			Bromide, tech, drums .lb.	1.85	1.90	1.90	1.85
.52	.50			Carbonate, 90%, 50 gal drs gal.	.22	.22	.22	.22
5.00	5.00			Chloride, 200 lb. drums .lb.	.30	.40	.40	.30
.35	.25	3.50	3.50	Chlorocarbonate, ebys. .lb.	.50	.52	.52	.50
.30	.30	.30	.30	Ether, Absolute, 50 gal drs. lb.	5.00	5.00	5.00	5.00
.55	.45	.55	.45	Furoate, 1 lb tins .lb.	.25	.29	.29	.25
.36	.30	.36	.30	Lactate, drums works. .lb.	.30	.30	.30	.30
.70	.79	.70	.70	Methyl Ketone, 50 gal drs. lb.	.45	.55	.55	.45
.85	.75	.85	.75	Oxalate, drums works. .lb.	.30½	.30½	.30½	.30½
.10	.05	.11	.07	Oxybutyrate, 50 gal drs wks. lb.	.70	.70	.70	.70
.30	.25	.40	.25	Ethylene Dibromide, 60 lb dr. lb.				
.31	.23	.37	.31	Chlorhydrin, 40%, 50 gal drs chloro. cont. .lb.	.75	.85	.85	.75
.24	.16	.20	.24	Diethyl ether, 50 gal drums. .lb.	.05	.07	.07	.05
.26	.19	.23	.26	Glycol, 50 gal drs wks. .lb.	.25	.28	.28	.25
.23	.19			Mono Butyl Ether drs wks. .lb.	.23	.27	.27	.23
.65	.45	.65	.62	Mono Ethyl Ether drs wks. .lb.	.16	.20	.20	.16
25.00	20.00	25.00	20.00	Mono Ethyl Ether Acetate dr. wks. .lb.	.19	.23	.23	.19
21.00	15.00	21.00	15.00	Mono Methyl Ether, drs. lb.	.19	.23	.23	.19
.09	.05	.09	.07½	Oxide, cyl. .lb.	2.00	2.00	2.00	2.00
4.25&10	3.65&10	5.50&10	4.90&10	Ethylidenaniline. .lb.	.45	.47½	.47½	.45
4.00&50	3.50&50	4.75&50	4.00&50	Feldspar, bulk. .ton	25.00	20.00	25.00	20.00
46.00	41.00	25.00	25.00	Powdered, bulk works. .ton	15.00	21.00	21.00	15.00
				Ferric Chloride, tech, crystal 475 lb bbls. .lb.	.05	.07½	.07½	.05
				Fish Scrap, dried, wks. .unit	4.30&10	4.35&10	4.35&10	4.30&10
				Acid, Bulk 7 & 3½% delivered	3.50&50	3.50&50	3.50&50	
				Norfolk & Balt. basis. .unit	41.00	46.00	46.00	41.00
				Fluorspar, 98% bags. .lb.				
					<b>Formaldehyde</b>			
.42	.37½	.42	.39	Formaldehyde, aniline, 100 lb. drums. .lb.	.37½	.42	.42	.37½
.10	.08½	.09	.08½	USP, 400 lb bbls wks. .lb.	.07½	.07½	.08	.07½
.04	.02½	.04	.02½	Fossil Flour. .lb.	.02½	.04	.04	.02½
20.00	15.00	20.00	15.00	Fullers Earth, bulk, mines. .ton	15.00	20.00	20.00	15.00
30.00	25.00	30.00	25.00	Imp. powd 3-1 bags. .ton	25.00	30.00	30.00	25.00
.19½	.17	.19½	.1	Furfural (tech.) drums, wks. .lb.	.10	.15	.15	.10
.30	.30			Furfuralamide (tech) 100 lb dr. .lb.	.30	.30	.30	.30
5.00	5.00			Furfuryl Acetate, 1 lb tins. .lb.	5.00	5.00	5.00	5.00
.50	.50			Alcohol, (tech) 100 lb dr. .lb.	.50	.50	.50	.50
1.00	.50			Furoic Acid (tech) 100 lb dr. .lb.	.50	.50	.50	.50
1.35	1.35	1.35	1.3	Fusel Oil, 10% impurities. .gal.	1.35	1.35	1.35	1.35
.05	.04	.05	.0	Fustic, chips. .lb.	.04	.05	.05	.04
.22	.20	.22	.20	Crystals, 100 lb boxes. .lb.	.20	.22	.22	.20
.10	.09	.10	.09	Liquid, 50°, 600 lb bbls. .lb.	.09	.10	.10	.09
.16	.14	.23	.21	Solid, 50 lb boxes. .lb.	.14	.16	.16	.14
26.00	25.00	32.00	30.00	Sticks. .ton	25.00	26.00	26.00	25.00
.52	.45	.52	.50	G Salt paste, 360 lb bbls. .lb.	.45	.50	.50	.45
.21	.18	.21	.20	Gall Extract. .lb.	.18	.20	.20	.18
.07	.06	.09	.08	Gambier, common 200 lb cs. .lb.	.06	.07	.07	.06
.14	.08	.14	.12	25% liquid, 450 lb bbls. .lb.	.08	.10	.10	.08
.09	.08½	.12	.11	Singapore cubes, 150 lb bg. .lb.	.08½	.09	.09	.08½
.50	.45	.50	.45	Gelatin, tech, 100 lb cases. .lb.	.45	.50	.50	.45
1.70	.70	1.00	.70	Glauber's Salt, tech, c-1 wks. .100 lb.	1.00	1.70	1.70	1.00
3.34	3.20	3.34	3.24	Glucose (grape sugar) dry 70-80° bags c-1 NY. .100 lb.	3.24	3.34	3.34	3.24
3.14	3.14	3.14	3.14	Tanner's Special, 100 lb bags. .100 lb.	3.14	3.14	3.14	3.14
.24	.20	.24	.20	Glue, medium white, bbls. .lb.	.20	.24	.24	.20
.26	.22	.26	.22	Pure white, bbls. .lb.	.22	.26	.26	.22
.16	.13½	.19	.15	Glycerin, CP, 550 lb drs. .lb.	.14	.14½	.14½	.14
.12½	.10	.15	.11½	Dynamite, 100 lb drs. .lb.	.12	.12½	.12½	.12
.08½	.07½	.10½	.08½	Saponification, tanks. .lb.	.07½	.08	.08	.07½
.07½	.06½	.09½	.07½	Soap Lye, tanks. .lb.	.07	.07½	.07½	.07
35.00	15.00	35.00	15.00	Graphite, crude, 220 lb bgs. .ton	15.00	35.00	35.00	15.00
.09	.06	.09	.06	Flake, 500 lb bbls. .lb.	.06	.09	.09	.06
					<b>Gums</b>			
.04½	.03	.04½	.03½	Gum Accroides, Red, coarse and fine 140-150 lb bags. .lb.	.03½	.04½	.04½	.03½
.06½	.06½	.06½	.06	Powd, 150 lb bags. .lb.	.06	.06½	.06½	.06



Not only to serve our customers well, but better than they are accustomed to being served, is our constant aim.

Our new offices, laboratory and warehouse equipped with storage tanks, railroad siding and other special features, are designed to this end.

**Naphthaline**  
**Tri-Sodium Phosphate**  
**Calcium Chloride**  
**Copper Sulphate**  
**Anhydrous Glauber's**  
**Salts (99.5% Pure)**

**Alex C. Fergusson Co.**

**CHEMICALS**

ESTABLISHED 1855

**20 Oregon Avenue, Philadelphia, Pa.**

Telephone  
**OREGON 8107**

Cable  
**FERGUSJUNR**

**UNIFORMITY**

**STANDARD GRADE  
SILICATE OF SODA**

... operates within a complete cycle of satisfaction, measuring in unmistakable terms — product quality, its adaptability to a given purpose, and the rendition of a capable service.

**4  
Factories  
4  
Better Service**

**Standard Silicate Company**  
CINCINNATI, OHIO

FACTORIES: Cincinnati, O. Lockport, N. Y. Marseilles, Ill. Jersey City, N. J.  
OFFICE: 414 Frick Building, Pittsburgh, Pa.

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

followed by Belgium, the United Kingdom and Canada with 203, 70 and 62 tons, respectively. Imports of copper sulfate into the United States for 1925 to 1929, inclusive were as follows: 1925, 903 tons, valued at \$92,930; 1926, 1,279 tons, value 117,269; 1927, 989 tons, value 88,748; 1928, 1,806 tons, value 172,256; 1929, 2,694 tons, value 272,859.

**Divi divi** — Lack of demand coupled with ample stocks in this country resulted in much lower prices. Quotations are now at \$35 per ton.

**Fish Scrap** — The season has barely opened but there has been fair inquiry for this material which is quoted at \$4.30 & 10 per unit.

**Formaldehyde** — Demand for this material continues off and the market is said to be in easy position although prices are being maintained. Export business has fallen away considerably during this year as is shown by figures for the first quarter. During that period, exports totaled 476,544 pounds as compared with 761,466 pounds in the corresponding period of 1929.

**Glycerin** — Shipments of this material to the consuming industries continue below normal but in fairly good volume considering the general condition of industry.

**Gums** — Activity in this market has been almost at a standstill and the primary market continues to reflect the absence of any anticipation of future requirements. Prices generally continue their downward tendency in the face of subnormal demand, but any resumption of activity will probably put these market immediately into very strong position due to the slimness of stocks and small volume of orders for future shipment from the primary markets. The uncertainty of the American market has slowed up production in the primary markets, where conditions are very quiet with but little work being done in gathering these materials. Exports of copal gum from Antwerp to the United States during March amounted to 466,139 pounds, valued at \$30,368 as compared with 443,278 pounds, valued at \$30,696 for February. Total exports to the United States for the first quarter of this year were 1,405,875 pounds, valued at \$94,147.

1929		1928		Current Market	1930		
High	Low	High	Low		High	Low	
.20	.18	.20	.18	Yellow, 150-200 lb bags...lb.	.18	.20	.18
.40	.35	.40	.35	Animi (Zanzibar) bean & pea			
.55	.50	.55	.50	250 lb cases...lb.	.35	.40	.35
.12	.09	.12	.09	Glassy, 250 lb cases...lb.	.50	.55	.50
.17	.15	.17	.15	Asphaltum, Barbadoes (Manjak)			
65.00	58.00	65.00	55.00	200 lb bags...lb.	.09	.12	.09
.26	.22	.26	.22	Egyptian, 200 lb cases...lb.	.15	.17	.15
.11	.10	.11	.10	Gilsonite Selects, 200 lb bags			
.17	.15	.17	.16	ton	58.00	65.00	65.00
.13	.13	.14	.13	Damar Batavia standard 136, lb			
.30	.26	.30	.29	cases...lb.	.16	.16	.16
.24	.21	.24	.20	Batavia Dust, 160 lb bags...lb.	.08	.09	.08
.14	.10	.15	.13	E Seeds, 136 lb cases...lb.	.11	.11	.11
.40	.38	.48	.33	F Splinters, 136 lb cases and			
.17	.14	.15	.14	bags...lb.	.10	.10	.13
.09	.08	.09	.08	Singapore, No 1, 224 lb cases lb.	.20	.21	.24
.14	.12	.14	.12	No. 2, 224 lb cases...lb.	.18	.19	.20
.36	.35	.36	.35	No. 3, 180 lb bags...lb.	.09	.10	.11
.65	.58	.65	.58	Benzoin Sumatra, U. S. P. 120 lb			
.17	.17	.17	.16	cases...lb.	.38	.40	.40
.16	.15	.16	.15	Copal Congo, 112 lb bags, clean			
.14	.13	.14	.13	opaque...lb.	.16	.17	.17
.19	.17	.19	.16	Dark, amber...lb.	.07	.08	.08
.13	.13	.13	.12	Light, amber...lb.	.12	.14	.12
.11	.10	.11	.07	Water white...lb.	.37	.45	.37
.21	.20	.21	.17	Mastic...lb.	.59	.60	.65
.16	.15	.16	.14	Manila, 180-190 lb baskets			
.23	.20	.25	.22	Loba A...lb.	.17	.17	.17
.38	.35	.38	.35	Loba B...lb.	.15	.16	.15
.12	.10	.12	.10	Loba C...lb.	.12	.13	.14
.40	.38	.40	.38	Pale bold, 224 lb cases...lb.	.17	.19	.19
.26	.24	.26	.24	Pale nubs...lb.	.13	.13	.13
.72	.35	.60	.26	East Indies chips, 180 lb bags lb.	.10	.11	.10
.20	.17	.20	.17	Pale bold, 180 lb bags...lb.	.18	.19	.21
.20	.14	.20	.17	Pale nubs...lb.	.13	.14	.16
.11	.11	.11	.11	Pontianak, 224 lb cases...lb.	.20	.21	.20
.03	.03	.03	.03	Pale bold gen No 1...lb.	.14	.15	.15
17.00	16.00	16.00	16.00	Pale gen chips spot...lb.	.13	.14	.14
.58	.60	.60	.60	Elemi, No. 1, 80-85 lb cases...lb.	.13	.13	.13
.68	.48	.66	.62	No. 2, 80-85 lb cases...lb.	.12	.13	.13
4.00	3.75	4.00	4.00	No. 3, 80-85 lb cases...lb.	.12	.13	.12
3.90	3.75	3.90	3.90	Kauri, 224-226 lb cases No. 1			
.26	.24	.26	.24	No. 2 fair pale...lb.	.50	.57	.50
.15	.12	.15	.12	Brown Chips, 224-226 lb	.35	.38	.38
1.30	1.28	1.30	1.28	cases...lb.	.10	.12	.10
.18	.15	.18	.15	Bush Chips, 224-226 lb			
.12	.12	.12	.12	cases...lb.	.38	.40	.38
.10	.09	.10	.09	Pale Chips, 224-226 lb cases	.24	.26	.24
3.25	2.50	3.25	2.50	Sandarac, prime quality, 200			
.12	.10	.12	.10	lb bags & 300 lb casks...lb.	.33	.35	.40
.03	.02	.03	.02	Hellum, 1 lit. bot...lit.	25.00	25.00	25.00
.90	.85	.90	.85	Hematine crystals, 400 lb bbls lb.	.14	.18	.14
.18	.16	.20	.17	Paste, 500 bbls...lb.	.11	.11	.11
70.00	60.00	70.00	60.00	Hemlock 25%, 600 lb bbls wks lb.	.03	.03	.03
13.50	13.00	13.00	13.00	Bark...ton	16.00	16.00	16.00
.14	.14	.14	.13	Hexalene, 50 gal drs wks...lb.	.60	.60	.60
.18	.17	.18	.17	Hexamethylenetetramine, drs lb.	.48	.50	.48
.08	.08	.08	.08	Hoof Meal, fob Chicago...unit	3.75	3.75	3.75
.09	.09	.09	.09	South Amer. to arrive...unit	3.75	3.75	3.75
.08	.08	.08	.08	Hydrogen Peroxide, 100 vol, 140			
57.00	52.00	57.00	52.00	lb obys...lb.	.24	.26	.24
4.50	4.50	4.50	4.50	Hydroxyamine Hydrochloride lb.	3.15	3.15	3.15
1.05	1.05	1.05	1.05	Hypernic, 51%, 600 lb bbls...lb.	.12	.15	.12
.17	.15	.17	.15	Indigo Madras, bbls...lb.	1.28	1.30	1.28
.06	.05	.06	.06	20% paste, drums...lb.	.15	.18	.15
.08	.08	.08	.08	Synthetic, liquid...lb.	.12	.12	.12
.03	.03	.03	.03	Iron Chloride, see Ferric or			
.12	.12	.12	.12	Ferrous			
26.00	24.00	27.00	26.00	Iron Nitrate, kegs...lb.	.09	.10	.09
.08	.07	.08	.07	Coml, bbls...100 lb.	2.50	3.25	2.50
.25	.22	.30	.30	Oxide, English...lb.	.10	.12	.10
60.00	50.00	50.00	48.00	Red, Spanish...lb.	.02	.03	.02
				Isopropyl Acetate, 50 gal drs gal.	.85	.90	.85
				Japan Wax, 224 lb cases...lb.	.14	.15	.14
				Kieselguhr, 95 lb bgs NY...ton	60.00	70.00	60.00
				Lead Acetate, bbls wks...100 lb.	13.00	13.50	13.00
				White crystals, 500 lb bbls			
				wks...100 lb.	14.00	14.50	14.00
				Arsenate, drs 1c-1 wks...lb.	.13	.16	.13
				Dithiofuroate, 100 lb dr...lb.	1.00	1.00	1.00
				Metal, c-1 NY...100 lb.	7.75	7.75	6.10
				Nitrate, 500 lb bbls wks...lb.	.14	.14	.14
				Oleate, bbls...lb.	.17	.18	.17
				Oxide Litharge, 500 lb bbls lb.	.08	.08	.08
				Red, 500 lb bbls wks...lb.	.09	.09	.09
				White, 500 lb bbls wks...lb.	.09	.09	.09
				Sulfate, 500 lb bbls wk...lb.	.08	.08	.08
				Leuna saltpetre, bags c.i.f...ton	57.60	57.60	57.60
				S. points c.i.f...ton	57.90	57.90	57.90
				Lime, ground stone bags...ton	4.50	4.50	4.50
				Live, 325 lb bbls wks...100 lb.	1.05	1.05	1.05
				Lime Salts, see Calcium Salts			
				Lime-Sulfur soln bbls...gal.	.15	.17	.15
				Lithopone, 400 lb bbls 1c-1 wks			
				Logwood, 51%, 600 lb bbls...lb.	.08	.08	.08
				Chips, 150 lb bags...lb.	.03	.03	.03
				Solid, 50 lb boxes...lb.	.12	.12	.12
				Sticks...ton	24.00	26.00	24.00
				Lower grades...lb.	.07	.08	.07
				Madder, Dutch...lb.	.22	.25	.22
				Magnesite, calc, 500 lb bbl...ton	50.00	60.00	50.00

# Industrial Chemicals

*including*

**Acids      Alums**  
**Aluminas--Hydrate and Calcined**  
**Ammonium Persulphate**  
**Bleaching Powder**  
**Caustic Soda**  
**Chlorine--Liquid**  
**Genuine Greenland Kryolith**



## **PENNSYLVANIA SALT MANUFACTURING COMPANY**

**Incorporated 1850**

**Executive Offices :**  
**Widener Building, Philadelphia, Pa.**

**Representatives :**

<b>New York</b>		<b>Chicago</b>
<b>Pittsburgh</b>	<b>Tacoma</b>	<b>St. Louis</b>

**Works :**  
**Wyandotte, Michigan**  
**Menominee, Michigan**  
**Tacoma, Washington**  
**Philadelphia, Pennsylvania**  
**Natrona, Pennsylvania**

**American Powder Company**

# **NITRO- CELLULOSE**

With the greatly increased production now made available by the installation of new and modern manufacturing equipment, we are in a position to supply promptly all grades of nitrocellulose in any desired quantity.

We know that our product is manufactured under careful chemical control and with unfailing uniformity.

We know that you will find it of exceptional quality and color . . . that it will go into solution more quickly . . . that it is the best product for you to use.

*Industrial Chemicals Division*

**American Cyanamid Company**  
*535 Fifth Avenue New York*

*Sole Sales Agents for Our Subsidiary,  
American Powder Company*

American Cyanamid Company,  
535 Fifth Avenue,  
New York City.

You may arrange for your representative to call upon us  
and discuss Nitrocellulose.

Name.....

Company.....

Address.....

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

**Mangrove Bark** — Prices have declined somewhat during the past month due to slackening demand, so that quotations are now at \$32 per ton.

**Mercury** — Conditions in this market have developed a much firmer tendency during the past month, due chiefly to the fact that offerings of domestic material have practically disappeared and the imported is assuming control of the market quotations have advanced accordingly so that prices are now at \$120 @ \$126 per flask with all evidences pointing to gradually stronger conditions. Mercurio Europeo, the foreign holding company, has issued the following statement with regard to its position. This organization practically dominates the mercury markets of the world, including that in this country, except for those periods when there is heavy offering of domestic material. But domestic demand exceeds domestic supply, so that the mercury trust's communication is of interest. "Rumours have been circulated among buyers on the European and other markets of the world, specially on that of the United States of America, reporting the possibility of a dissolution of the Italo-Spanish syndicate, a consequence of the changes that took place in the Government in Spain, to be followed by a fall in the present price of the headquarters in Lausanne, owing to the competition that would arise between the two groups when realizing their respective stocks. There is no foundation whatever in these allegations, which simply originate from the adversaries of the syndicate. There is no reason at all to suggest that the Spanish Government should be against the Italo-Spanish agreement. The price fixed by "Mercurio Europeo" will remain unaltered, in accordance with its policy of stabilization, so much in favor with actual consumers. The exaggerated heavy stocks alleged to be in the hands of the syndicate in no way influence the fixing of prices, the mines being able to sell only quantities that can be taken up by the market to cover consumption. The mines have neither the intention nor the desire or possibility to sell separately, they being in a position to cover 95 per cent of the demand for mercury in Europe, Asia, and the Far East. Buyers are warned against the manoeuvres of interested parties who wish, it seems, to revive the hope again of introducing the former system of speculation in mercury, against which the organ-

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
Magnesium						
.06½	.06	.06½	.06	Magnesium Carb, tech, 70 lb bags NY.....lb.	.06	.06½
36.00	36.00	37.00	27.00	Chloride flake, 375 lb. drs c-1 wks.....ton	36.00	36.00
33.00	33.00	33.00	33.00	Imported shipment.....ton	33.00	33.00
31.00	31.00	31.00	31.00	Fused, imp, 900 lb bbls NY ton	31.00	31.00
.10½	.10	.10½	.10	Fluosilicate, crys, 400 lb bbls wks.....lb.	.10	.10½
.42	.42	.42	.42	Oxide, USP, light, 100 lb bbls lb.....lb.	.42	.42
.50	.50	.50	.50	Heavy, 250 lb bbls.....lb.	.50	.50
1.25	1.00	.....	.....	Peroxide, 100 lb cs.....lb.	1.00	1.25
.10½	.09½	.10½	.09½	Silicofluoride, bbls.....lb.	.09½	.10½
.26	.25	.25	.23	Stearate, bbls.....lb.	.25	.26
.24	.19	.24	.24	Manganese Borate, 30%, 200 lb bbls.....lb.	.19	.19
.08½	.08	.08½	.08	Chloride, 600 lb casks.....lb.	.08	.08½
.06	.04½	.....	.....	Dioxide, tech (peroxide) drs lb.	.04½	.06
.03½	.02½	.03½	.03	Ore, powdered or granular	.03	.03
.04½	.03½	.04½	.04	75-80%, bbls.....lb.	.02½	.03
.05½	.04	.05½	.05	80-85%, bbls.....lb.	.03½	.03½
.08½	.07	.07½	.07	85-88%, bbls.....lb.	.04	.04½
Nom.	.03½	Nom.	.03½	Sulfate, 550 lb drs NY.....lb.	.07	.08
35.00	30.00	45.00	39.00	Manganese 55%, 400 lb bbls.....lb.	.03½	Nom.
15.00	14.00	12.00	10.00	Bark, African.....ton	32.00	33.00
2.05	2.05	.....	.....	Marble Flour, bulk.....ton	15.00	15.00
126.00	120.00	132.00	121.00	Mercurous chloride.....lb.	2.05	2.05
.74	.67	.74	.72	Mercury metal.....75 lb flask	119.00	124.00
1.55	1.50	1.80	1.50	Meta-nitro-aniline.....lb.	.67	.69
.90	.80	.94	.90	Meta-nitro-para-toluidine 200 lb bbls.....lb.	1.50	1.55
.72	.67	.74	.72	Meta-phenylene-diamine 300 lb bbls.....lb.	.80	.84
.....	.....	.....	.....	Meta-toluene-diamine, 300 lb bbls.....lb.	.67	.69
Methanol						
.65	.51	.58	.46	Methanol, (Wood Alcohol).....	.38	.42
.65	.53	.60	.47	95%.....gal.	.39	.43
.68	.53	.63	.44	97%.....gal.	.40½	.44½
.66	.54	.58	.48	Pure.....gal.	.40½	.44½
.62	.55	.75	.45	Synthetic.....gal.	.43	.45
.95	.95	.95	.95	Denat. gre. tanks.....gal.	Nom.	Nom.
.85	.73	.90	.68	Methyl Acetate, drums.....gal.	.65	.70
.95	.85	.95	.85	Acetone.....gal.	.70	.75
.....	.....	.....	.....	Anthrquinone.....lb.	.45	.45
.60	.45	.60	.55	Cellosolve, (See Ethylene Glycol Mono Methyl Ether)	.45	.45
.50	.50	.....	.....	Chloride, 90 lb cyl.....lb.	.50	.50
80.00	65.00	80.00	65.00	Furoate, tech., 50 gal. dr., lb.	80.00	80.00
115.00	110.00	115.00	110.00	Mica, dry grd. bags wks.....lb.	115.00	115.00
3.00	3.00	.....	.....	Wet, ground, bags wks.....lb.	3.00	3.00
.75	.70	.75	.70	Michler's Ketone, kegs.....lb.	.75	.75
4.20	3.75	4.20	3.95	Monoethlorobenzene, drums see, Chorobenzene, mono.....lb.	4.00	4.00
.07	.06½	.07	.06½	Monoethylorthotoluidin, drs lb.	.07	.07
.04½	.03½	.04½	.04	Monomethylparaminosulfate 100 lb drums.....lb.	.04½	.04½
.08½	.05	.08½	.08	Montan Wax, crude, bags.....lb.	.05	.05
43.00	40.00	50.00	42.00	Myrobalans 25%, liq bbls.....b	.05	.05
40.00	26.50	40.00	32.50	50% Solid, 50 lb boxes.....lb.	41.00	41.00
34.00	27.50	40.00	32.50	J1 bags.....ton	26.50	26.50
.18	.16	.18	.18	J 2 bags.....ton	27.50	27.50
.05½	.05½	.06	.05½	R 2 bags.....ton	.16	.16
.04½	.04½	.04½	.04½	Naphtha, v. m. & p. (deodorized) bbls.....gal.	.05½	.05½
.05	.05	.05	.05	Naphthalene balls, 250 lb bbls wks.....lb.	.04½	.04½
.24	.20	.24	.21	Crushed, chipped bgs wks.....lb.	.05	.05
.40	.37	.38	.35	Flakes, 175 lb bbls wks.....lb.	.20	.21
.13	.13	.09½	.09	Nickel Chloride, bbls kegs.....lb.	.37	.40
.13	.13	.09	.08½	Oxide, 100 lb kegs NY.....lb.	.13	.13
1.30	1.25	1.30	1.25	Salt bbl. 400 bbls lb NY.....lb.	.13	.13
1.20	.98½	1.20	.98½	Single, 400 lb bbls NY.....lb.	1.25	1.30
18.00	12.00	14.00	13.00	Nicotine, free 40%, 8 lb tins, cases.....lb.	1.20	1.20
.10½	.09	.10½	.10½	Sulfate, 10 lb tins.....lb.	18.00	18.00
.36	.25	Nom.	.40	Nitric Acid, bulk.....ton	.09	.09½
4.00	3.40	4.00	3.35	Nitrobenzene, redistilled, 1000 lb drs wks.....lb.	.25	.36
.25	.25	.25	.25	Nitrocellulose, c-l-cl, wks.....lb.	.25	.36
.15	.14	.15	.14	Nitrogenous Material, bulk unit	3.00	3.40
.16½	.16	Nom.	.25	Nitronaphthalene, 550 lb bbls.....lb.	.14	.15
.13	.12	.18	.17	Nitrotoluene, 1000 lb drs wks.....lb.	.16	.16½
50.00	30.00	50.00	45.00	Nutgalls Aleppy, bags.....lb.	.12	.13
23.00	20.00	23.00	20.00	Chinese, bags.....lb.	30.00	35.00
.13½	.11½	.13½	.13	Oak Bark, ground.....ton	23.00	23.00
2.25	2.15	2.25	2.20	Whole.....ton	.11½	.13
2.60	2.50	2.50	2.35	Orange-Mineral, 1100 lb casks NY.....lb.	2.15	2.25
.65	.60	.65	.50	Orthoaminophenol, 50 lb kgs.....lb.	2.60	2.60
.28	.18	.28	.18	Orthoanisidine, 100 lb drs.....lb.	.50	.65
.10	.07	.07	.06	Orthochlorophenol, drums.....lb.	.25	.25
.33	.30	.35	.32	Orthocresol, drums.....lb.	.07	.10
.18	.16	.18	.17	Orthodichlorobenzene, 1000 lb drums.....lb.	.33	.33
.90	.85	.90	.85	Orthonitrochlorobenzene, 1200 lb drs wks.....lb.	.16	.18
.30	.25	.31	.29	Orthonitrotoluene, 1000 lb drs wk.....lb.	.85	.90
.....	.....	.....	.....	Orthonitrophenol, 350 lb dr.....lb.	.30	.30
.....	.....	.....	.....	Orthotoluidine, 350 lb bbl 1c-1 lb.	.16	.16

# NIACET ACETIC ACID

*for the manufacture of*  
**CELLULOSE ACETATE  
LACQUER SOLVENTS  
PHARMACEUTICALS  
DYES --- INTERMEDIATES  
and similar products**

*Shipments made in*

Aluminum Tank Cars	65000 lbs.
Aluminum Drums	900 lbs.
Aluminum Cans	100 lbs.

**Other  
NIACET  
PRODUCTS**

**ACETALDEHYDE  
PARALDEHYDE  
CROTONALDEHYDE  
ACETALDOL  
PARALDOL  
FASTAN**

## *Niacet Chemicals Corporation*

**SALES OFFICE & PLANT  
Niagara Falls  
NEW YORK**

### *Thanks to the Chinese . . . for Printing!*

**M**OST different from other peoples, the Chinese! Yet most interesting. Though they disliked anything new, choosing to follow the customs and dress of their fathers and mothers, yet from this placid race have come some of our most important inventions. A Chinese princess first unravelled the cocoon of the silkworm, and wove it into silk. Twelve hundred years before Christ, the Chinese made coins from bronze.

They developed printing from writing on tablets with a stylus, then with a brush on silken paper. From these early beginnings our modern giant presses have been developed.

The ideas of the Chinese were sound. That is why the printing industry has developed to its present stage.

Likewise, in a similar way, the constructive policies of the Pennsylvania Sugar Company and The Franco-American Chemical Works have resulted in placing them among the leaders in the Alcohol and Chemical Industries.

Their national sales organization under the supervision of A. K. Hamilton, and backed by their modern plants in Philadelphia and Carlstadt, N. J., enables them to render the service and co-operation which modern industry now requires.

*We shall be glad to send on request copies of our booklets,—ALCOHOL FOR INDUSTRIAL PURPOSES and STANDARDIZED CHEMICALS.*



### **...Pennsylvania Sugar Company... Franco American Chemical Works**

*Represented By*

**A. K. Hamilton**

95 Wall St.

New York, N. Y.

*Distillery*

*Chemical Plant*

Philadelphia, Pa.

Carlstadt, N. J.

*Sales representatives and warehouse stocks in principal cities.*

**Purchasing Power of the Dollar: 1926 Average—\$1 00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124**

ization of 'Mercurio Europeo' arose, fixing a stable price for the longest period of time possible. As it is, the Lausanne price has undergone no change for the last eighteen months."

**Methanol** — Competition, continues to feature this market in practically all grades of this material. The price situation is not a particularly firm one and the entire market is in poor condition due to excess supplies and continues small demand. March production of crude methanol, based upon reports from the entire industry to the Department of Commerce, amounted to 657,853 gallons, compared with 615,032 gallons during the previous month and 725,662 gallons during March last year. Crude methanol production for the first quarter amounted to 1,988,771 gallons, compared with 2,111,842 gallons during the same time last year. Stocks of crude methanol at the end of the month were 644,320 gallons at plants and 864,600 gallons at refineries and in transit. For the previous month stocks at plants were 510,218 gallons and at refineries 838,412 gallons. Production of refined methanol during March was 398,476 gallons, compared with 394,647 gallons at the end of the previous month. Consumption, based on shipments, 522,153 gallons, compared with 451,173 gallons in February, while stocks at the close of March were 632,705 gallons, compared with 705,258 gallons at the close of the previous month.

**Nitrogenous Material** — In common with the other members of the fertilizer group, the market for this material has been very weak. Stocks have accumulated and demand has been below normal. As a result, prices are lower at \$3.00 per unit.

**Phenol** — Demand for this material continues to be rather good. Some heavy buying from the petroleum industry has offset the rather lagging demands from the plastic industry.

**Rosin** — Lack of demand continues to characterize activity in this market and as a result prices have fallen off considerably during the past month. Although still lagging behind last year, the export business showed some recovery during April, amounting to 68,507 barrels, valued at \$911,250, as against 62,873 barrels valued at \$900,573 in April 1929. This is encouraging since the rosins were

[illegible]

# Oxalic Acid Chlorate Soda Phosphorous Compounds

MANUFACTURED BY  
OLDBURY ELECTRO-CHEMICAL CO., NIAGARA FALLS, N. Y.

**JOSEPH TURNER & Co.**  
19 Cedar St.      -x-      New York

## "COLUMBIA BRAND"

**Caustic  
Soda**

SOLID—FLAKE—GROUND  
LIQUID



**Soda  
Ash**

LIGHT — DENSE

**Columbia Chemical Division**

Pittsburgh Plate Glass Co., Barberton, Ohio

**QUALITY**

**SERVICE**

*Address all Communications to*

**THE ISAAC WINKLER & BRO. CO.**

*Sole Agents*

FIRST NATIONAL BANK BLDG.,  
CINCINNATI, OHIO

50 BROAD STREET  
NEW YORK

## Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124**

by far the heaviest losers during the first three months of the year. For the first time this year exports of wood rosin show a decline under the corresponding month in 1929. These fell from 16,400 to 14,656 barrels, with respective values of \$229,332 and \$186,324.

**Salt Cake** — Supplies of this material continue rather scarce and the market is quite strong. Considerable material is being imported, but it is expected that this condition will be readjusted as soon as new domestic production begins to make itself felt.

**Shellac** — No improvement has evidenced itself in this market as demand continues to lag below a normal level. Prices continue at about the same level as when last reported with the exception of bone dry which has declined to 35c lb. Arrivals of shellac during April approximated 11,798 packages or about 1,934,872 pounds. This compared with arrivals of, roughly, 14,825 packages during March, or about 2,431,300 pounds, making a decline of, roughly, 500,000 pounds. Imports in February attained a total of 1,983,988 pounds and in January 1,906,261. Thus the total imports for the first four months of the year aggregated about 8,256,421. This figure for the first third of 1930 is sharply under the same period last year.

**Soda Ash** — The alkali group generally continues to report good business. Volume of shipments is ahead of 1928 and about 3 to 4 per cent below that for May of last year. So far as ash is concerned, shipments to the glass industry are off as many of the plants close at this time for repairs. But heavy volume is going to the soap industry which compensates for the other.

**Soda Caustic** — Although the rayon industry, a heavy consumer, is not taking nearly normal supplies of this material, there have been unusually heavy demands from the petroleum industry, so that the volume of shipments have been well maintained.

**Sodium Acetate** — This market is reported as being much firmer due to smaller supplies and increased demand.

**Sodium Nitrate** — Competition between the synthetic and natural product has resulted in lower prices during the past month so that quotations are now on the basis of \$2.07 @ \$2.10 per 100 pounds. Stocks are reported as being heavy and the continued lack of demand has placed the market in rather weak condition. Chief interest has centered in the projected holding company for combining all the Chilean producers. Prices on futures are awaiting definite announcements from that source. Chilean production for

1929		1928			Current	1930	
High	Low	High	Low		Market	High	Low
.17	.14	.17	.16	Binoxiate, 300 lb bbls.....lb.	.14	.17	.14
.30	.30	.30	.30	Bisulfate, 100 lb kegs.....lb.	.....	.30	.30
.05½	.05½	.05½	.05½	Carbonate, 80-85% calc. 800 lb casks.....lb.	.05½	.05½	.05½
.09	.08½	.09	.06½	Chlorate crystals, powder 112 lb keg wks.....lb.	.08½	.09	.08½
.05	.05½	.05½	.05½	Chloride, crys bbls.....lb.	.05½	.06	.05½
.28	.23	.28	.27	Chromate, kegs.....lb.	.23	.28	.23
.57	.55	.57	.55	Cyanide, 110 lb. cases.....lb.	.55	.57	.55
.13	.11½	.12	.11½	Metabisulfite, 300 lb. bbl.....lb.	.12	.13	.12
.24	.16	.17	.16	Oxalate, bbls.....lb.	.20	.24	.20
.12	.11	.12	.11	Perchlorate, casks wks.....lb.	.11	.12	.12
.16½	.16	.15½	.15	Pernanganate, USP, crys 500 & 100 lb drs wks.....lb.	.16	.16½	.16
.40	.38	.38	.37	Prussiate, red, 112 lb keg.....lb.	.38	.40	.38
.21	.18½	.18½	.18	Yellow, 500 lb casks.....lb.	.21	.21	.18½
.51	.51	.51	.51	Tartrate Neut, 100 lb keg.....lb.	.....	.21	.21
.25	.21	.25	.25	Titanium Oxalate, 200 lb bbls.....lb.	.21	.23	.21
5.00	5.00	.....	.....	Propyl Furoate, 1 lb tins.....lb.	.....	5.00	5.00
.05	.04	.05	.04	Pumice Stone, lump bags.....lb.	.04	.05	.04
.06	.04½	.06	.04½	250 lb bbls.....lb.	.04½	.06	.04½
.03	.02½	.03	.02½	Powdered, 350 lb bags.....lb.	.02½	.03	.02½
.03½	.03	.03½	.03	Putty, commercial, tubs.....lb.	.....	.03½	.03½
.05	.05	.05	.05	Linseed Oil, kegs.....lb.	.....	.05	.05
1.75	1.50	1.50	1.50	Pyridine, 50 gal drums.....gal.	1.50	1.75	1.50
.13½	.13	.13	.13	Pyrites, Spanish cif Atlantic ports bulk.....unit	.13	.13½	.13
.04	.03	.04	.03	Quebracho, 35% liquid tks.....lb.	.03	.04	.03
.04½	.03½	.04	.03½	450 lb bbls e-1.....lb.	.03½	.04½	.03½
.04	.05	.05	.04	35% Bleaching, 450 lb bbl.....lb.	.04½	.05	.05
.05½	.05	.05	.05	Solid, 63%, 100 lb bales cif.....lb.	.05	.05½	.05
.05	.05	.05	.05	Clarified, 64%, bales.....lb.	.....	.05½	.05½
.06	.05½	.06	.05½	Quercitron, 51 deg liquid 450 lb bbls.....lb.	.05½	.06	.05½
.13	.10	.13	.10	Solid, 100 lb boxes.....lb.	.10	.13	.10
14.00	14.00	14.00	14.00	Bark, Rough.....ton	.....	14.00	14.00
35.00	34.00	35.00	34.00	Ground.....ton	34.00	35.00	34.00
.46	.44	.46	.45	R Salt, 250 lb bbls wks.....lb.	.40	.44	.40
.18	.18	.....	.....	Red Sanders Wood, grd bbls.....lb.	.....	.18	.18
1.25	1.15	1.35	1.25	Resorcinol Tech, cans.....lb.	1.15	1.25	1.15
.62	.57	.57	.57	Rosin Oil, 50 gal bbls, first run.....gal.	.57	.58	.57
.74	.60	.62	.62	Second run.....gal.	.60	.61	.60

## Rosin

Rosins 600 lb bbls 280 lb...unit											
9.25	7.45	9.75	8.20	B.....	6.35	7.75	6.35				
9.25	7.70	9.80	8.25	D.....	6.85	8.00	6.85				
9.27	8.30	9.95	8.60	E.....	7.10	8.17	7.10				
9.27	8.40	10.10	8.65	F.....	7.30	8.45	7.30				
9.45	8.40	10.10	8.75	G.....	7.32	8.45	7.32				
9.50	8.40	10.10	8.75	H.....	7.35	8.55	7.35				
9.50	8.40	10.15	8.80	I.....	7.37	8.58	7.37				
9.55	8.45	10.15	8.85	K.....	7.40	8.65	7.40				
9.85	8.50	10.30	8.85	M.....	7.45	8.80	7.45				
10.30	8.93	11.00	9.15	N.....	7.50	8.95	7.50				
11.30	9.00	11.65	10.15	WG.....	7.70	9.25	7.70				
12.30	9.30	12.65	10.40	WW.....	8.40	9.85	8.40				
30.00	24.00	30.00	24.00	Rotten Stone, bags mines..... ton	24.00	20.00	30.00	18.00			
.08	.05	.08	.07	Lump, imported, bbls..... lb.	.05	.07	.07	.05			
.12	.09	.12	.09	Selected bbls..... lb.	.09	.12	.12	.09			
.05	.02	.05	.02	Powdered, bbls..... lb.	.02	.05	.05	.02			
.05	.04½	.05	.04½	Sago Flour, 150 lb bags..... lb.	.04½	.05	.05	.04½			
1.00	1.00	.....	.....	Sal Soda, bbls wks..... 100 lb.	.....	1.00	1.00	1.00			
24.00	19.00	20.00	19.00	Salt Cake, 94-96 % c-1 wks. ton	20.00	24.00	24.00	20.00			
21.00	12.00	17.00	15.00	Chrome..... ton	18.00	25.00	25.00	18.00			
.06½	.06½	.06½	.06½	Saltpetre, double refd granular..... lb.	.06½	.06½	.06½	.06½			
.01½	.01½	.01½	.01½	450-500 lb bbls..... lb.	.01½	.01½	.01½	.01½			
.61	.47	.62½	.49	Satin, White, 500 lb bbls..... lb.	.35	.36	.47	.35			
.45	.40	.55	.45	Shellac Bone dry bbls..... lb.	.31	.40	.31	.40			
.47	.39	.58	.47	Garnet, bags..... lb.	.32	.39	.31	.39			
.44	.36	.55	.42	Superfine, bags..... lb.	.28	.34	.28	.36			
.57	.53	.57	.53	T. N. bags..... lb.	.53	.57	.57	.53			
11.00	8.00	11.00	8.00	Schaeffer's Salt, kgs..... lb.	8.00	11.00	11.00	8.00			
30.00	22.00	30.00	22.00	Silica, Crude, bulk mines..... ton	22.00	30.00	30.00	22.00			
32.00	32.00	.....	.....	Refined, floated bags..... ton	32.00	32.00	32.00	32.00			
40.00	32.00	40.00	32.00	Air floated bags..... ton	32.00	40.00	40.00	32.00			
				Extra floated bags..... ton	40.00	40.00	40.00	40.00			
22.00	15.00	22.00	15.00	Soapstone, Powdered, bags f. o. b. mines..... ton	15.00	22.00	22.00	15.00			

## Soda

Soda Ash, 58% dense, bags c-1									
1.40	1.40	1.40	1.40	wks. ....	100 lb. ....	1.40	1.40	1.40	
1.34½	1.34	2.29	2.40	58% light, bags. ....	100 lb. ....	1.34½	1.34½	1.34½	
1.32	1.32	1.32½	1.32½	Contract, bags c-1 wks. ....	100 lb. ....	1.32	1.32	1.32	
Soda Caustic, 76% grnd & flake									
3.35	3.35	4.21	4.16	drums. ....	100 lb. ....	3.35	3.35	3.35	
2.95	2.95	3.91	3.76	76% solid drs. ....	100 lb. ....	2.95	2.95	2.95	
2.90	2.90	3.00	3.00	Contract, c-1 wks. ....	100 lb. ....	2.90	2.90	2.90	
Sodium Acetate, tech. .... 450 lb.									
.06½	.04½	.05	.04½	bbls wks. ....	lb. ....	.05	.05½	.05½	.04
.19	.18	.....	.....	Arsenate, drums. ....	lb. ....	.18	.19	.19	.18
1.50	.75	.....	.....	Arsenite, drums. ....	gal. ....	.75	1.00	1.00	.75
2.41	2.41	2.41	2.41	Bicarb, 400 lb bbl NY. ....	100 lb. ....	2.41	2.41	2.41	



**TRIANGLE BRAND**  
**Nichols Copper Co.**

Offices  
 40 Wall St., New York  
 230 N. Michigan Ave. Chicago

Works  
 Laurel Hill, N. Y.  
 El. Paso, Texas

**Cream of Tartar**  
**99½—100% Pure**  
**U. S. P.**

**Tartaric Acid**  
**U. S. P.**

POWDERED                      CRYSTALS  
 GRANULATED

**TARTAR CHEMICAL WORKS**


**Royal Baking Powder Co.**

595 Madison Avenue

**New York**

*Largest Manufacturers in the  
 United States*

**THREE ELEPHANT  
 BORAX  
 BORIC ACID**



*Stocks carried by the  
 following distributors:*

A. Daigger & Co.,  
 Chicago, Ill.  
 Detroit Soda Products Co.,  
 Wyandotte, Mich.  
 Arnold, Hoffman & Co.,  
 Providence, R. I. Philadelphia, Pa.  
 Thompson Hayward Chemical Company,  
 Kansas City, Mo. St. Louis, Mo.  
 Marble Nye Co.,  
 Boston, Mass. Worcester, Mass.  
 Innis, Speiden & Co., New York, N. Y.  
 Maryland Chemical Co., Baltimore, Md.

In Canada  
 St. Lawrence Trading Company, Ltd.  
 Montreal, Toronto and Vancouver

**American Potash & Chem. Corp.**  
 WOOLWORTH BUILDING                      NEW YORK CITY

**George Mann & Co. Inc.**  
 PROVIDENCE, R. I.

BRANCH OFFICE & WAREHOUSE  
 LOWELL, MASS.

**INDUSTRIAL CHEMICALS**

**Red Oil**

Heavy Single Pressed  
 Double Pressed  
 Low Chilling Point  
 White Oleine

**Glycerine**

Commercial -- Distilled  
 Water White

**Stearic Acid**

Single -- Double -- Triple  
 Rubber Makers



**CARLOAD LOTS  
 AND  
 WAREHOUSE STOCK**

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

April 1930 amounted to 202,067 metric tons. Shipments during that month totaled 79,150 metric tons, of which 27,900 tons were shipped to the United States.

**Sodium Nitrite** — Demand for this material has been off somewhat due to smaller requirements from manufacturers of aniline dyes, but prices continue firm and unchanged.

**Sodium Phosphate**—Demand for the di-salt has not been so good but prices have been firmly maintained and the market is reported as being strong. Conditions in tri-are rather competitive and somewhat unsettled, although demand has been good.

**Sodium Sulfide** — Is still reported as being in limited supply, although without much effect due to the fact that demands for the material from rayon manufacturers is decidedly off. Movement of crystals to the leather industry is said to be in good volume.

**Turpentine** — Demand has been very slack during the past month and as a result prices are lower with spirits at 48c @ 54c gal. and wood distilled at 45c gal. Exports of gum spirits fell rather sharply under those of last year totaling 584,532 gallons with a value of \$319,203, against 721,953 gallons valued at \$404,196. Exports of wood turpentine also continued to lag behind those of last year, the gallon totals of the exports being 79,868 and 59,042, with values of \$39,440 and \$30,521.

**Valonia** — While quotations on beard remain unchanged at \$40 per ton, cups and mixture are lower, at \$25 and \$30 per ton respectively due to somewhat slackened demand.

**Wattle Bark** — Ample stocks coupled with decreased demand have resulted in lower price quotations on this material which is now at \$40 per ton in a quiet market.

## OILS AND FATS

**Chinawood Oil** — Prices have declined considerably during the past month so that quotations are now about 1c pound lower than when last quoted. Prices in China are also lower and stocks seem abundant both in this country and abroad. Stocks in the hands of consumers are plentiful so that buying interest has been at a standstill. As a consequence, importers have shown no desire to bring in any more material and business generally has been at a standstill. The tank price at the Coast is at 8 $\frac{3}{4}$ c lb., tanks, New York, are at 9 $\frac{1}{4}$ c lb., and barrels, New York, are at 10 $\frac{3}{4}$ c lb. Exports from Hankow during April amounted to 10,888,000 pounds, of which 9,200,000 pounds were shipped to the United States, and 1,688,000 pounds to Europe. Stocks

1929		1928		Current Market	1930			
High	Low	High	Low		High	Low		
.07 $\frac{1}{2}$	.07	.07	.06 $\frac{1}{2}$	Bichromate, 500 lb cks wks. lb.	.07	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07
.04	.04	.04	.04	Bisulfite, 500 lb bbl wks. lb.	.04	.04	.04	.04
1.35	1.30	1.35	1.30	Carb. 400 lb bbls NY 100 lb.	2.30	2.30	2.30	2.30
.11	.06 $\frac{1}{2}$	.06 $\frac{1}{2}$	.05 $\frac{1}{2}$	Chlorate, wks. lb.	.07 $\frac{1}{2}$	.08	.08	.07 $\frac{1}{2}$
13.00	12.00	13.00	12.00	Chloride, technical, ton	12.00	13.00	13.00	12.00
.20	.18	.20	.20	Cyanide, 96-98%, 100 & 250 lb drums wks. lb.	.18	.20	.20	.18
.09	.08 $\frac{1}{2}$	.09	.08 $\frac{1}{2}$	Fluoride, 300 lb bbls wks. lb.	.08 $\frac{1}{2}$	.08 $\frac{1}{2}$	.09	.08 $\frac{1}{2}$
.24	.22	.24	.22	Hydroarsulfite, 200 lb bbls f. o. b. wks. lb.	.22	.24	.24	.22
.05	.05	.05	.05	Hypochloride solution, 100 lb cks. lb.	.05	.05	.05	.05
3.05	2.50	3.05	2.65	Hyposulfite, tech, pea cys 375 lb bbls wks. 100 lb.	2.50	3.00	3.00	2.50
2.65	2.40	2.65	2.40	Technical, regular crystals 375 lb bbls wks. 100 lb.	2.40	2.65	2.65	2.40
.45	.45	.45	.45	Metanilate, 150 lb bbls. lb.	.45	.45	.45	.45
.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	Monohydrate, bbls. lb.	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$
.57	.54	.57	.55	Naphthionate, 300 lb bbl. lb.	.54	.57	.57	.54
2.22 $\frac{1}{2}$	2.09	2.45	2.12 $\frac{1}{2}$	Nitrate, 92%, crude, 200 lb bags c-1 NY 100 lb.	2.07	2.10	2.22 $\frac{1}{2}$	2.07
.08	.07 $\frac{1}{2}$	.08 $\frac{1}{2}$	.07 $\frac{1}{2}$	Nitrite, 500 lb bbls spot. lb.	.07 $\frac{1}{2}$	.08	.08	.07 $\frac{1}{2}$
.27	.25	.27	.25	Orthochlorotoluene, sulfonate, 175 lb bbls wks. lb.	.25	.27	.27	.25
.42	.37	.42	.37	Oxalate Neut, 100 lb kegs. lb.	.37	.42	.42	.37
.22	.18	.22	.21	Perborate, 275 lb bbls. lb.	.18	.20	.20	.18
3.55	3.25	3.55	3.25	Phosphate, di-sodium, tech. 310 lb bbls. 100 lb.	3.00	3.25	3.25	3.00
4.00	3.90	.72	.69	tri-sodium, tech, 325 lb bbls. 100 lb.	3.50	4.00	4.00	3.50
.12 $\frac{1}{2}$	.12	.12 $\frac{1}{2}$	.12	Pieramate, 100 lb kegs. lb.	.69	.72	.72	.69
.20	.15	.14	.13 $\frac{1}{2}$	Prussiate, Yellow, 350 lb bbl wks. lb.	.12	.12 $\frac{1}{2}$	.12 $\frac{1}{2}$	.12
1.65	1.65	1.45	1.20	Pyrophosphate, 100 lb keg. lb.	.15	.20	.20	.15
.80	.70	1.10	.85	Silicate, 60 deg 55 gal drs, wks 40 deg 55 gal drs, wks 100 lb.	.70	1.65	1.65	1.65
.05 $\frac{1}{2}$	.05	.05	.05	Silicofluoride, 450 lb bbls NY lb.	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$
.43	.38	.49	.48 $\frac{1}{2}$	Stannate, 100 lb drums. lb.	.34	.43	.43	.34
.29	.25	.29	.18	Stearate, bbls. lb.	.25	.29	.29	.25
.18	.16	.18	.16	Sulfanilate, 400 lb bbls. lb.	.16	.18	.18	.16
.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	Sulfate Anhyd, 550 lb bbls c-1 wks. lb.	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$
.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	Sulfide, 80% crystals, 440 lb bbls wks. lb.	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$
.04	.03 $\frac{1}{2}$	.04	.03 $\frac{1}{2}$	62% solid, 650 lb drums 1c-1 wks. lb.	.03	.03 $\frac{1}{2}$	.03 $\frac{1}{2}$	.03
.03 $\frac{1}{2}$	.03	.03 $\frac{1}{2}$	.03 $\frac{1}{2}$	Sulfite, crystals, 400 lb bbls wks. lb.	.03	.03 $\frac{1}{2}$	.03 $\frac{1}{2}$	.03
.76	.28 $\frac{1}{2}$	.50	.40	Sulfocyanide, bbls. lb.	.28	.35	.35	.28
1.40	.88	.85	.80	Tungstate, tech, crystals, kegs. lb.	.88	.88	.88	.88
.40	.35	.40	.35	Solvent Naphtha, 110 gal drs wks. lb.	.35	.40	.40	.35
.01 $\frac{1}{2}$	.01 $\frac{1}{2}$	.01 $\frac{1}{2}$	.01 $\frac{1}{2}$	Spruce, 25% liquid, bbls. lb.	.01 $\frac{1}{2}$	.01 $\frac{1}{2}$	.01 $\frac{1}{2}$	.01 $\frac{1}{2}$
.01	.01	.01	.01	25% liquid, tanks wks. lb.	.01	.01	.01	.01
.02 $\frac{1}{2}$	.02	.02 $\frac{1}{2}$	.02	50% powd, 100 lb bag wks lb.	.02	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02
4.12	3.82	4.42	3.07	Starch, powd., 140 lb bags 100 lb.	3.72	4.02	4.02	3.72
4.02	3.72	4.32	2.97	Pearl, 140 lb bags. 100 lb.	3.62	3.82	3.92	3.62
.06 $\frac{1}{2}$	.05 $\frac{1}{2}$	.06 $\frac{1}{2}$	.05 $\frac{1}{2}$	Potato, 200 lb bags. lb.	.05 $\frac{1}{2}$	.06 $\frac{1}{2}$	.06 $\frac{1}{2}$	.05 $\frac{1}{2}$
.06 $\frac{1}{2}$	.05 $\frac{1}{2}$	.06 $\frac{1}{2}$	.05 $\frac{1}{2}$	Imported bags. lb.	.05 $\frac{1}{2}$	.06 $\frac{1}{2}$	.06 $\frac{1}{2}$	.05 $\frac{1}{2}$
.08 $\frac{1}{2}$	.08	.08 $\frac{1}{2}$	.08	Soluble. lb.	.08	.08 $\frac{1}{2}$	.08 $\frac{1}{2}$	.08
.10	.09 $\frac{1}{2}$	.10	.09 $\frac{1}{2}$	Rice, 200 lb bbls. lb.	.09 $\frac{1}{2}$	.10	.10	.09 $\frac{1}{2}$
.07	.06 $\frac{1}{2}$	.07	.06 $\frac{1}{2}$	Wheat, thick bags. lb.	.06 $\frac{1}{2}$	.07	.07	.06 $\frac{1}{2}$
.10	.09 $\frac{1}{2}$	.10	.09 $\frac{1}{2}$	Thin bags. lb.	.09 $\frac{1}{2}$	.10	.10	.09 $\frac{1}{2}$
.07 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$	Strontium carbonate, 600 lb bbls wks. lb.	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$
.09 $\frac{1}{2}$	.08 $\frac{1}{2}$	.09	.08 $\frac{1}{2}$	Nitrate, 600 lb bbls NY. lb.	.09	.09 $\frac{1}{2}$	.09 $\frac{1}{2}$	.09
1.25	1.25	.09	.08 $\frac{1}{2}$	Peroxide, 100 lb drs. lb.	1.25	1.25	1.25	1.25
				Sulfur				
2.05	2.05	2.05	2.05	Sulfur Brimstone, broken rock, 250 lb bag c-1. 100 lb.	2.05	2.05	2.05	
19.00	18.00	19.00	18.00	Crude, f. o. b. mines. ton	18.00	19.00	19.00	
2.40	2.40	2.40	2.40	Flour for dusting 99 $\frac{1}{4}$ %, 100 lb bags c-1 NY. 100 lb.	2.40	2.40	2.40	
2.50	2.50	2.50	2.50	Heavy bags c-1. 100 lb.	2.50	2.50	2.50	
3.45	3.45	3.45	3.45	Flowers, 100%, 155 lb bbls c-1 NY. 100 lb.	3.45	3.45	3.45	
2.85	2.65	2.85	2.65	Roll, bbls 1c-1 NY. 100 lb.	2.65	2.85	2.85	
.05 $\frac{1}{2}$	.05	.05 $\frac{1}{2}$	.05	Sulfur Chloride, red, 700 lb drs wks. lb.	.05	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	
.04 $\frac{1}{2}$	.03 $\frac{1}{2}$	.04 $\frac{1}{2}$	.03 $\frac{1}{2}$	Yellow, 700 lb drs wks. lb.	.03 $\frac{1}{2}$	.04 $\frac{1}{2}$	.04 $\frac{1}{2}$	
.08 $\frac{1}{2}$	.07	.08 $\frac{1}{2}$	.08	Sulfur Dioxide, 150 lb cyl. lb.	.07	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$	
.19	.10	.19	.17	Extra, dry, 100 lb cyl. lb.	.10	.12	.12	
.65	.10	.65	.10	Sulfuryl Chloride, 600 lb dr. lb.	.10	.65	.65	
15.00	12.00	15.00	12.00	Talc, Crude, 100 lb bgs NY. ton	12.00	15.00	15.00	
18.00	16.00	18.00	16.00	Refined, 100 lb bgs NY. ton	16.00	18.00	18.00	
25.00	18.00	35.00	30.00	French, 220 lb bags NY. ton	18.00	22.00	22.00	
45.00	35.00	45.00	38.00	Refined, white, bags. ton	35.00	40.00	40.00	
50.00	40.00	50.00	40.00	Italian, 220 lb bags NY. ton	40.00	50.00	50.00	
55.00	50.00	55.00	50.00	Refined, white, bags. ton	50.00	55.00	55.00	
10.00	9.00			Superphosphate, 16% bulk, wks. ton	9.50	9.50	9.50	
4.50&10	4.00&10	10&10	6.5&10	Triple bulk, wks. unit	.65	.65	.65	
4.80&10	3.75&10	8.0&10	3.90&10	Tankage Ground NY. unit	3.75&10	4.00&10	3.75&10	
4.80&10	4.35&10	5.00&10	4.60&10	High grade f.o.b. Chicago. unit	3.85&10	3.85&10	3.75&10	
.05 $\frac{1}{2}$	.04 $\frac{1}{2}$	.05	.04 $\frac{1}{2}$	South American cif. unit	3.75&10	4.25&10	3.75&10	
.04 $\frac{1}{2}$	.03 $\frac{1}{2}$	.04	.03 $\frac{1}{2}$	Tapioes Flour, high grade bgs. lb.	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	
.27	.26	.27	.26	Medium grade, bags. lb.	.04 $\frac{1}{2}$	.04 $\frac{1}{2}$	.04 $\frac{1}{2}$	
.30	.29	.30	.29	Tar Acid Oil, 15% drums. gal.	.24	.25	.27	
				25% drums. gal.	.26	.28	.30	

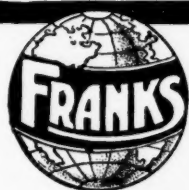
ATLACIDE  
**CALCIUM  
CHLORATE**

**SODIUM  
CHLORATE**

Agricultural  
Insecticides and  
Fungicides

**Chipman Chemical Engineering Co. Inc.**  
BOUND BROOK, N. J.

Chicago, Ill.; Palo Alto, Cal.; Houston, Tex.; Boise, Idaho  
Winnipeg, Man.



Aluminum  
Calcium  
Magnesium  
Zinc

**Stearates**

**FRANKS CHEMICAL PRODUCTS CO.**

MANUFACTURING CHEMISTS  
55 - 33 RD STREET  
BROOKLYN, N. Y.

BUSH TERMINAL BLDG., NO. 9

Normal  
**BUTYL ALCOHOL**

Superior Quality

*Send for Sample*

**Chemical Solvents**

INCORPORATED

110 East 42nd Street,  
New York City

Phone Caledonia 4623-4

Alfred W. Jenkins

Schuyler L. Parsons

**Parsons & Petit**

ESTABLISHED 1857  
26 BEAVER STREET  
NEW YORK CITY

*Selling Agents*

**The Freeport Sulphur Co.**  
IN THE UNITED STATES AND CANADA

**The Sulphur Export Corp.**  
IN MEXICO

**The Salzbergwerk  
Neu-Stassfurt**

IN UNITED STATES  
FOR CARBONATE OF POTASH

**D. Correale Santacroce**

REGGIO, CALABRIA  
BERGAMOT, LEMON AND ORANGE OILS

*Distributors for*

**The Diamond Alkali Co.**

*Fertilizer Materials of All Kinds  
Soap and Powder Manufacturers Supplies*

## Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

on hand at Hankow at the end of April were estimated at approximately 3,000 short tons. Although April exports to the United States were lower than the previous month when exports totaled 10,374,000 pounds, they exceeded those for April 1929 when exports totaled only 7,694,160 pounds. United States receipts of oil for the first four months of this year were considerably higher than the same period of 1928, totaling 42,954,000 pounds as compared with 27,877,465 pounds for the corresponding period of 1929.

**Coconut Oil** — Continues in rather stagnant position with little interest being manifested by either buyers or sellers. Prices remain at about the same levels.

**Corn Oil** — Lower prices have prevailed in the grain market and as a result quotations on oil are considerably lower than when last quoted. Liberal quantities have been offered at low prices during the past month but there has been but little buying interest. Crude oil is quoted at 7¼c lb. in tanks at the mills, while the barrel price is at 9¼c lb. Refined oil is quoted at 10c lb. in tanks and 10¼c lb. in barrels.

**Cottonseed Oil** — Although the market has been fairly steady during the past month, there has been no very active trading and prices are just about at the same level as when last quoted. Cottonseed crushings for the nine months ended with April totaled 4,725,287 tons, against 4,831,811 tons for the corresponding period a year ago, according to figures compiled to-day by the United States Census Bureau. Receipts of seed at mills during the period were 4,884,394 tons, against 5,004,933 tons a year ago, and stocks on hand April 30 were 198,598 tons, against 191,155 tons. Output of cottonseed productions during the period included 1,475,703,247 pounds of crude oil, against 1,523,620,650 pounds a year ago; 1,276,697,310 pounds of refined oil, against 1,329,518,161 pounds; 2,101,750 tons of cake and meal, against 2,175,155 tons.

**Dog Fish Oil** — Demand continues heavy for this material despite the fact that the season is over and supplies have almost disappeared. Accordingly, prices are on a purely nominal basis.

**Herring Oil** — Although considerable oil has been reported available in the Chesapeake bay section, and offerings have been made at 45c gal. f. o. b. Baltimore, buyers have shown but little interest in oil at that price.

**Lard Oil** — Has been off somewhat during the past month so that quotations are now at 12¾c lb. on prime and 10¾c lb. on extra.

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
1.75	1.15	1.75	1.15	Terra Alba Amer. No. 1, bgs or		
2.00	1.50	2.00	1.50	bbbs mills, 100lb.	1.15	1.75
.02	.01	.02	.02	No. 2 bags or bbbs, 100lb.	1.50	2.00
.09	.09			Imported bags, 100lb.	.01	.01
.20	.20	.20	.20	Tetrachlorethane, 50 gal drs.	.09	.09
.24	.22	.24	.22	Tetralene, 50 gal drs wks.	.20	.20
				Thiocarbamilid, 170 lb bbl.	.26	.28
.14	.13	.17	.14	Tin Bichloride, 50% soln, 100 lb		
.38	.33	.41	.36	bbbs wks.	.12	.12
.45	.39	.58	.48	Crystals, 500 lb bbbs wks.	.31	.34
.56	.42	.75	.53	Metal Straits NY.	.38	.38
				Oxide, 300 lb bbbs wks.	.40	.42
.30	.27	.35	.30	Tetrachloride, 100 lb drs wks.		
.50	.22	.40	.40		.25	.25
.14	.07	.14	.13	Titanium Dioxide 300 lb bbl.	.22	.50
.45	.45	.45	.40	Pigment, bbbs.	.07	.07
.40	.40	.45	.35	Toluene, 110 gal drs.	.40	.40
.94	.90	.94	.90	8000 gal tank cars wks.	.35	.35
.32	.31	.32	.31	Toluidine, 350 lb bbbs.	.90	.94
.95	.85	.90	.85	Mixed, 900 lb drs wks.	.31	.32
.80	.70	.80	.70	Toner Lithol, red, bbbs.	.90	.95
1.55	1.50	.80	1.70	Para, red, bbbs.	.80	.80
.36	.32	3.90	3.60	Toluidine	1.50	1.55
.10	.10			Triacetin, 50 gal drs wks.	.36	.36
.60	.55			Trichlorethylene, 50 gal dr.	.10	.10
.45	.33	.50	.36	Triethanolamine, 50 gal drs.	.40	.42
.70	.58	.73	.69	Tricresyl Phosphate, drs.	.33	.45
.75	.60	.75	.70	Triphenyl guanidine.	.58	.60
2.00	1.75	3.00	2.50	Phosphate, drums.	.60	.70
.65	.51	.66	.50	Tripoli, 500 lb bbbs.	.75	2.00
.57	.49	.59	.46	Turpentine Spirits, bbbs.	.48	.54
.30	.15	.20	.18	Wood Steam dist. bbbs.	.45	.52
105.00	98.00			Urea, pure, 112 lb cases.	.15	.17
106.30	99.30			Fert. grade, bags c.i.f. ton	108.00	108.00
				e. i. f. S. points.	109.30	109.30
55.00	42.00	76.00	55.00	Valonia Beard, 42% tannin		
35.00	30.00	55.00	58.00	bags.	40.00	40.00
43.00	35.00	64.00	45.00	Cups, 30-31% tannin.	25.00	27.00
2.05	2.00	2.10	1.75	Mixture, bark, bags.	30.00	32.50
1.00	1.00			Vermillion, English, kegs.	1.75	1.80
49.75	43.50	76.00	49.75	Vinyl Chloride, 16 lb cyl.	1.00	1.00
				Wattle Bark, bags.	40.00	47.75
.06	.06	.06	.05	Extract 55%, double bags ex-		
1.25	1.00	1.25	1.25	dock.	.06	.06
13.00	13.00	13.00	13.00	Whiting, 200 lb bags, c-1 wks		
1.35	1.35	1.35	1.35	Alba, bags c-1 NY.	1.00	1.00
.33	.33	.32	.32	Gilders, bags c-1 NY.	1.35	1.35
.32	.30	.32	.30	Xylene, 10 deg tanks wks.	.31	.31
.38	.38	.38	.38	Commercial, tanks wks.	.28	.33
				Xylidine, crude.	.37	.38

## Zinc

5.75	5.25	.05	5.85	Zinc Ammonium Chloride powd.,		
.11	.10	.10	.09	400 lb bbbs.	5.25	5.75
.06	.05	.06	.06	Carbonate Tech, bbbs NY.	.10	.11
.06	.06	.06	.06	Chloride Fused, 600 lb drs.	.05	.06
3.00	3.00	3.00	3.00	wks.	.06	.06
.41	.40	.41	.40	Gran., 500 lb bbbs wks.	.06	.06
1.00	1.00	.09	.09	Soln 50%, tanks wks.	3.00	3.00
.08	.08			Cyanide, 100 lb drums.	.40	.41
				Dithiofuroate, 100 lb dr.	1.00	1.00
6.45	6.45	6.40	6.07	Dust, 500 lb bbbs c-1 wks.	.09	.11
.07	.07	.07	.07	Metal, high grade alabs c-1		
.11	.09	.12	.10	NY.	6.45	6.45
1.25	1.25			Oxide, American bags wks.	.07	.07
1.25	1.25			French, 300 lb bbbs wks.	.11	.11
.26	.25			Perborate, 100 lb drs.	1.25	1.25
.03	.03	.03	.03	Peroxide, 50 lb drs.	1.25	1.25
.32	.30	.32	.30	Stearate, 400 bbl wks.	.23	.24
.30	.28	.30	.29	Sulfate, 500 lb bbbs.	.30	.32
.03	.02	.03	.02	Sulfide, 400 bbl wks.	.30	.32
.50	.45	.50	.45	Sulfocarbonate, 100 lb keg.	.28	.30
.10	.08	.10	.08	Zirconium Oxide, Nat. kegs.	.02	.03
				Pure kegs.	.45	.50
				Semi-refined kegs.	.08	.10

## Oils and Fats

.13	.13	.14	.13	Castor, No. 1, 400 lb bbbs.	.13	.13	.13
.13	.12	.14	.12	No. 3, 400 lb bbbs.	.12	.13	.12
.15	.14	.17	.14	Blown, 400 lb bbbs.	.14	.15	.14
.16	.14	.17	.14	China Wood, bbbs spot NY.	.10	.13	.10
.15	.13	.14	.14	Tanks, spot NY.	.09	.11	.09
.14	.12	.14	.12	Coast, tanks, June.	.08	.10	.08
.10	.10	.11	.10	Cocconut, edible, bbbs NY.	.10	.10	.10
.09	.07	.10	.09	Ceylon, 375 lb bbbs NY.	.08	.08	.08
.08	.06	.09	.08	8000 gal tanks NY.	.06	.07	.06
.10	.09	.10	.09	Cochin, 375 lb bbbs NY.	.08	.08	.08
.09	.08	.09	.08	Tanks NY.	.08	.08	.08
.09	.07	.10	.08	Manila, bbbs NY.	.07	.08	.07
.08	.06	.08	.08	Tanks NY.	.06	.07	.06
.08	.06	.08	.07	Tanks, Pacific Coast.	.06	.06	.06

# TRI-SODIUM DI-SODIUM PHOSPHATES

Tri-Sodium Phosphate. Crystals of uniform size and sparkling white appearance. Bowker's is unsurpassed in quality for all industrial purposes.

Di-Sodium Phosphate. The exceptional purity of Bowker's insures the best results, with complete absence of trouble in the delicate operation of silk weighting and finishing. Bowker's Disoda is also being successfully used in treating water for high pressure steam generation.

**BOWKER CHEMICAL CO.**  
419 Fourth Avenue, New York City  
Phosphates Factory at Carteret, N. J.

## BORAX and BORIC ACID

Guaranteed 99½ to 100% Pure

Crystal - Granulated - Powdered  
REFINED and U. S. P.

Borax Glass  
Anhydrous Boric Acid  
Manganese Borate  
Ammonium Borate

Sulfur

Refined - All Grades

**PACIFIC COAST BORAX CO.**

51 Madison Ave., New York

Chicago

Los Angeles



# VICTOR

## FORMIC ACID 90%

REMARKABLY pure—the result of careful chemical control in the process of manufacturing. Water white in color. Shipped in strong, durable domestic carboys, returnable freight collect. Write for sample and quotation from our nearest stock.

**VICTOR PRODUCTS**

Formic Acid  
Oxalic Acid  
TriSodium Phos.  
TriCalcium Phos.  
Phosphoric Acid  
Sod. Ammon. Phos.

Epsom Salts  
Ammonium Phos.  
Mono Calcium Phos.  
Mono Sodium Phos.  
Dicalcium Phos.  
Sodium Pyro Phos.

Phosphorus  
**VICTOR CHEMICAL WORKS**  
343 So. Dearborn St., Chicago, Ill.  
St. Louis  
Nashville  
New York

## Xfungus

Reg. U. S. Pat. Off.

A Copper Carbonate  
Sulphur Compound

A fungicide

An insecticide

A plant Food

Ideal for Smut infection of wheat or oats, for dry seed treatment or infected ground. Most adequate as a spray for citrus fruits.

Economic-Effective

**COOPER'S  
CERTIFIED  
CHEMICALS**

Let us quote on your requirement

**CHARLES COOPER & CO.**

192 Worth St., New York

Works: Newark, N. J. Established, 1857

## Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - May 1930 \$1.124

**Linseed Oil** — Demand has been unusually quiet for this season of the year. Occasional sales have been reported but buyers have as yet shown no interest in anticipating their future requirements, being content apparently to await further developments. Because of short world crop of flaxseed during 1929, estimated to be 25 per cent below the harvest of 1928, world supplies of flaxseed on May 1 were the smallest in recent years and about 15 per cent less than a year ago, according to the quarterly flax review issued by the Bureau of Agricultural Economics, Department of Agriculture. Domestic supplies of flaxseed in all positions at the first of May were not greatly different from those similarly placed during the past five years on that date, the report stated. Argentine stocks on the other hand appear to be the smallest since 1923, while Canadian supplies were practically exhausted. A new crop slightly larger than last season is now ready for market in India. Domestic supplies of flaxseed, including imports during the six months October 1 to March 31, totaled 31,292,000 bushels, the smallest amount for this period since the 1923-24 season. To begin with, the crop was the smallest since 1922 and provided a domestic commercial supply of only 19,148,000 bushels. The movement of the world supplies into consuming channels during the winter and spring months was the lightest in recent years. Domestic utilization so far this season has been the smallest since 1922-23. Argentine shipments to consuming areas have been fairly heavy considering the smaller crop with unusually large shipments destined to the United States.

**Oleo Oil** — Of all the animal group, this is about the only one which has shown any activity or upward price trend during the past month. Quotations are now at 12½c lb. on No. 1, and 11c lb. on No. 2.

**Palm Oil** — Niger continues in small supply although there has been no change in the price level since last reported, quotations remaining at 7¼c lb. Other grades continue unchanged with but little buying interest in evidence.

**Rapeseed** — All grades of this material are quoted at lower levels due to the rather heavy offerings of Japanese at 66c gal. But little of the English is available due to the fact that none is being imported in the face of competition from the other grade. Prices are nominally at 80c gal. Blown oil is also lower at 90c gal.

**Tallow** — Very quiet conditions have prevailed in this market during the past month. Prices on extra have declined ¾c lb. in the face of total lack of buying interest, coupled with rather heavy stocks. Quotations are now at 6c lb.

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
.64	.57½	.69	.63	Cod, Newfoundland, 50 gal bbls		
.60	.60	.63	.60	gal. ....	.52	.56
				Tanks NY.....gal.	.54	.56
				Cod Liver see Chemicals.....		.62
.05½	.042	.06½	.05½	Copra, bags.....lb.	.046	.046
.10½	.09½	.11	.10	Corn, crude, bbls NY.....lb.	.09½	.10
.09½	.07½	.10	.08½	Tanks, mills.....lb.	.07½	.08
.11½	.10½	.12½	.11½	Refined, 375 lb bbls NY.....lb.	.10½	.10½
.11	.09	.11½	.10½	Tanks.....lb.	.10	.10
.09	.08½	.09½	.07½	Cottonseed, crude, mill.....lb.	.07½	.07½
.1075	.085	10.65	.09½	PSY 100 lb bbls spot.....lb.	.087	.088
.1080	.088	10.75	.09½	July-Sept.....lb.	.089	.095
				Degras, American, 50 gal bbls		
.05	.03½	.05	.04½	NY.....lb.	.03½	.04½
.05½	.04½	.05½	.04½	English, brown, bbls NY.....lb.	.04½	.05
.05½	.05	.05½	.05½	Light, bbls NY.....lb.	.05	.05½
				Dog Fish, Coast Tanks.....gal.	Nom.	.34
						.32
Greases						
.08½	.06	.08½	.07	Greases, Brown.....lb.	.05½	.06½
.08½	.06½	.08½	.07	Yellow.....lb.	.05½	.07½
.11½	.07½	.11	.09½	White, choice bbls NY.....lb.	.07½	.08½
		.42½	.40	Herring, Coast, Tanks.....gal.	Nom.	
Nom.		Nom.	.09½	Horse, bbls.....lb.	.09½	Nom.
.15½	.14½	.16½	.15½	Lard Oil, edible, prime.....lb.	.12½	.13½
.13½	.12	.13½	.12	Extra, bbls.....lb.	.10½	.12
.13½	.11½	.13	.11	Extra No. 1, bbls.....lb.	.10½	.11
.162	.105	10.8	10.0	Linseed, Raw, five bbl lots.....lb.	.144	.146
.158	.101	10.4	9.6	Bbls c-1 spot.....lb.	.14	.142
.15	.093	9.6	8.8	Tanks.....lb.	.132	.134
.52	.45	.48	.40	Menhaden Tanks, Baltimore gal.	.50	.50
.09	.09	.09	.09	Blown, bbls NY.....lb.	.09	.09
.70	.70	.70	.67	Extra, bleached, bbls NY.....gal.	.70	.70
.64	.63	.64	.63	Ligh, pressed, bbls NY.....gal.	.63	.64
.67	.66	.67	.66	Yellow, pressed, bbls NY.....gal.	.66	.67
				Mineral Oil, white, 50 gal bbls		
.60	.40	.60	.40	gal.....gal.	.40	.60
1.00	.95	1.00	.95	Russian, gal.....gal.	.95	1.00
.19	.18½	.19	.18½	Neatafoot, CT, 20* bbls NY lb.	.17	.17½
.13½	.12	.13½	.12	Extra, bbls NY.....lb.	.10½	.11½
.15½	.13½	.16½	.15½	Pure, bbls NY.....lb.	.12½	.13½
.11½	.10½	.17½	.11½	Oleo, No. 1, bbls NY.....lb.	.12½	.12½
.11½	.10	.15½	.11	No. 2, bbls NY.....lb.	.11	.11
.10½	.09½	.14	.10	No. 3, bbls NY.....lb.	.10½	.10½
1.40	1.05	1.40	1.18	Olive, denatured, bbls NY.....gal.	.95	1.00
2.00	1.95	2.00	1.75	Edible, bbls NY.....gal.	1.95	2.00
.11½	.08½	.11	.09½	Foots, bbls NY.....lb.	.07½	.08
.09	.08	.09½	.08½	Palm, Kernel, Casks.....lb.	.07½	.08½
.09	.07½	.09½	.07½	Lagos, 1500 lb casks.....lb.	.07½	.07½
.08½	.07	.08½	.07	Niger, Casks.....lb.	.07½	.07½
Nom.		.12½	.12	Peanut, crude, bbls NY.....lb.	Nom.	Nom.
.15	.14½	.17	.14½	Refined, bbls NY.....lb.	.14½	.15
.20	.15	.21	.13	Perilla, bbls NY.....lb.	.12½	.14½
.15½	.13	.15½	.10½	Tanks, Coast.....lb.	.11	.11½
1.75	1.70	1.75	1.70	Poppyseed, bbls NY.....gal.	1.70	1.75
1.04	1.04	1.06	1.01	Rapeseed, blown, bbls NY.....gal.	.90	1.00
.90	.82	.92	.83	English, drms. NY.....gal.	.80	.82
.88	.72	.90	.81	Japanese, drms. NY.....gal.	.66	.70
.11½	.10½	.10½	.09½	Red, Distilled, bbls.....lb.	.10½	.10½
.10½	.09½	.09½	.08	Tanks.....lb.	.09½	.09½
.44	.42	.50	.42	Salmon, Coast, 8000 gal tks.....gal.	Nom.	.44
.51	.45	.50	.41	Sardine, Pacific Coast tks.....gal.	.35	.42
.12	.11½	.13½	.12	Sesame, edible, yellow, dos.....lb.	.11½	.12
.12½	.12½	.15	.12½	White, dos.....lb.	.12½	.12½
.40	.40	.40	.40½	Sod, bbls NY.....gal.	.40	.40
				Soy Bean, crude.....lb.		
.10½	.09	.09½	.09	Pacific Coast, tanks.....lb.	.08½	.09½
.10½	.08½			Domestic tanks, f.o.b. mills.....lb.	.08	.08½
.12½	.11½	.12½	.12	Crude, bbls NY.....lb.	.10½	.10½
.11½	.10½	.10½	.10½	Tanks NY.....lb.	.09½	.09½
.13½	.13½	.13½	.13½	Refined, bbls NY.....lb.	.13½	.13½
.85	.84	.85	.84	Spermin, 38* CT, bleached, bbls		
.80	.79	.80	.79	NY.....gal.	.84	.85
				45* CT, bleached, bbls NY gal.	.79	.80
.18½	.15½	.18½	.11	Stearic Acid, double pressed dist		
.19	.15½	.19	.11½	bags.....lb.	.14½	.15
.20½	.17½	.20½	.13½	Double pressed saponified bags		
.12	.09½	.12½	.09½	lb.....lb.	.15	.15½
.08½	.07	.09½	.08½	Triple, pressed dist bags.....lb.	.16½	.17
.10½	.08	.10½	.09½	Stearine, Oleo. bbls.....lb.	.09	.09½
.12	.10½	.12½	.11½	Tallow City, extra loose.....lb.	.06	.07
.11	.09½	.11½	.10½	Edible, tierces.....lb.	.07½	.09½
Nom.	.08	Nom.	.08	Tallow Oil, Bbls, c-1 NY.....lb.	.09	.10
.12	.11	.11	.10½	Acidless tanks NY.....lb.	.08½	.10
.16	.14	.16	.14	Vegetable, Coast mate.....lb.	.07½	Nom.
				Turkey Red, single bbls.....lb.	.11	.12
.80	.74	.80	.78	Double, bbls.....lb.	.14	.16
.82	.76	.82	.80	Whale, bleached winter, bbls		
.78	.73	.78	.76	NY.....gal.	.74	.74
				Extra, bleached, bbls NY.....gal.	.76	.76
				Nat. winter, bbls NY.....gal.	.73	.73

**Sales Organization  
and  
Warehouse Facilities  
for  
Manufacturers  
of  
Industrial Chemicals**

We offer the services of a competent sales organization and warehousing facilities in Rocky Mountain Territory.



*"Chemicals for all purposes"*

**Western Scientific Supply Company  
Incorporated**

2228-38 Blake St.

Denver, Colo.

**MECHLING'S  
HYPOSULPHITE OF SODA**

Spraying and Dusting Materials  
Sulphite of Soda  
Silicate of Soda  
Bisulphite of Soda  
Sal Soda  
Epsom Salts  
Causticized Ash

Immediately available in any amount.

We will gladly advise you on particular problems.

**MECHLING BROS.  
CHEMICAL COMPANY**

PHILADELPHIA, PA. CAMDEN, N. J. BOSTON, MASS.

**MANUFACTURERS' AGENTS  
IMPORTERS AND EXPORTERS**

Acetone  
Acetone Oil  
Ammonium Nitrate  
Calcium Acetate  
Carbon Black "Crow Brand"  
Cellulose Acetate  
Decolorizing Carbons  
Diacetone Alcohol  
Formic Acid  
Lamp Black  
Methyl Ethyl Ketone  
Sodium Acetate  
Sodium Sulphide  
Triphenyl Phosphate

**R. W. Greeff & Co., Inc.**

10 EAST 40th STREET :: NEW YORK CITY

June '30: XXVI, 6

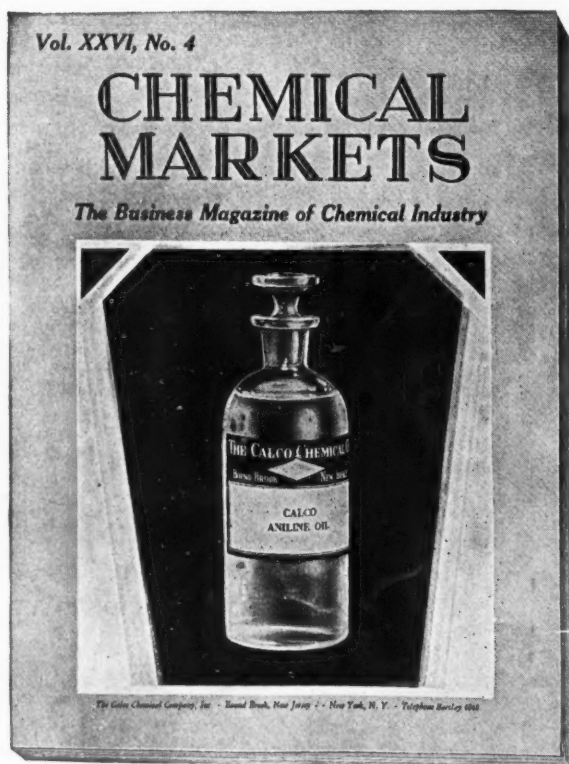
Chemical Markets

**Manufacturers of**  
Quinine  
Codeine  
Morphine  
Bismuths  
Iodides  
Etc.

In bulk for manufacturers and  
in packages for wholesale trade

**The New York Quinine and Chemical Works  
Incorporated**  
General Offices :  
99-117 North Eleventh Street  
New York—Borough of Brooklyn  
St. Louis Depot 304 South Fourth Street

665



1 Year  
\$ 2.50

BO

This Magazine

are standard  
of well-informed  
Chemical

## Recent Articles

- Protecting the Chemical Plant Worker**  
by A. L. Armstrong, Eastman Kodak Co.
- Goal of Modern Chemical Industry**  
by Lord Melchett
- Our Adolescent Lacquer Industry**  
by William L. Holter, Van Schaack Bros. Chemical Works
- The Chemical Jobber and Distribution Costs**  
by H. G. MacKelcan, Sales Mgr. Innis, Spelden & Co.
- New Acidproof Cements**  
by Carl A. Lechner, Kuttroff, Pickhardt & Co., Inc.
- What Do We Expect of the Chemist?**  
by Walter S. Landis, Vice President American Cyanamid Co.
- Chemical Backgrounds**  
by Williams Haynes
- Measure your Market**  
by Walter Emery, U. S. Rubber Co.
- Lowering Handling Costs**  
by C. H. Butler, Yale & Towne Mfg. Co.
- Chemical Cost Accounting**  
by D. A. Wilcox, Chemical Engineer
- Analyzing Chemical Mergers**  
by Dr. W. L. Thorp, Dept. Economics, Amherst

CHEMICAL MARKETS will keep you abreast of these swift-moving times. Each month you will find a dozen signed articles giving you the thought of our big chemical executives on important subjects. Special departments are devoted to the business problems of plant administration—employment, safety, costs, layout, packing, shipping, etc., and a "roto" section of chemical news pictures. You can count upon it to keep you posted on the news of the chemical process field—companies, new construction, new products, changes in personnel—while its market services are the most complete and accurate available. Its tables of chemical security quotations are the most elaborate published, giving the current price, shares sold, dividend rates, earnings, etc., with current publication of all chemical companies' financial statements. The prices current of over two thousand chemicals gives you an accurate statistical picture of the market position, for it shows not only the current price, but high and low for the current and the past two years, with the quantity, container, and position, under which each product is ordinarily quoted. You will find CHEMICAL MARKETS worth reading carefully, but, as important, its style is so crisp and human, that you will thoroughly enjoy each copy.

Chemical Markets, Inc.,  
25 Spruce St., New York, N. Y.

Please enter or extend my subscription to CHEMICAL MARKETS for

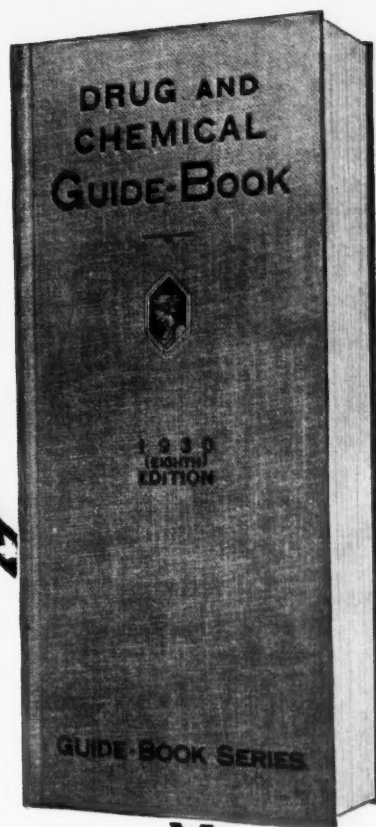
- ☐ 1 Year with 1930 edition of Drug and Chemical Guide-Book.....\$2.50
- ☐ 2 Years with 1930 and 1931 editions of Drug and Chemical Guide-Book.....\$4.00
- Check enclosed. ☐ Send bill. ☐

Name.....

Address.....

# TH

2 Years  
\$ 4.00



## This Guide-Book

desk equipment  
leaders in the  
Industries

This annual trade directory and buying guide is an invaluable tool of many uses, for example—it will answer any one of such questions as these:

What products does Sharples-Solvents manufacture?  
In what containers do Mathieson ship Aqua Ammonia?  
Who manufactures diaminostilbenedisulfonic acid?  
What is the formula for ammonium persulphate?  
Does carbon tetrachloride require a yellow shipping label?  
What are the uses of thiourea?  
What industries buy lead acetate?  
Where can I buy British gum?  
Has the Barrett Company an office in Louisville?  
What is the telephone number of Dow's St. Louis office?  
Who manufactures double-seamed steel barrels?  
What was the price of caustic potash in 1922 for domestic and imported?  
What is the tariff on copper oxide?  
Who is the president of the Institute of Fertilizer Chemists?

Combined in a handy volume—just the size of a blotter—is a catalog of the leading producers, a complete buying guide with specifications on the products and firms who sell them; a directory and telephone book of the industry; and much statistical data on prices, tariffs, trade associations, etc.

### Contents

- Part I. Combined catalogue of many leading chemical and drug firms.
- Part II. Alphabetical list of all chemicals, drugs, etc. in common use; with chemical and physical description of each, commercial grades, types and sizes of containers, etc. Names and addresses of sources are given under each product.
- Part III. Geographical directory of the Chemical, Drug and Allied Industries, giving street addresses and telephone numbers.
- Part IV. Container, Packing and Shipping Guide, including bags, barrels, boxes, tanks, tubes, filling equipment, etc., with names and addresses of manufacturers.
- Part V. Back prices for ten years on 200 chemicals, drugs, etc. Trade and Technical Associations. The Fordney-McCumber Tariff on chemicals and drugs corrected to January 1, 1930.

### \$2.00 Saved on 2-year subscription

Regular Price	}	Chemical Markets . . . 1 Year . . . . .	\$2.00
		Drug & Chemical Guide-Book (Annual Edition) . .	1.00
			<u>\$3.00</u>

(See Coupon on opposite page)



*Style sells your goods as much as quality. You retain expert stylists. Insure quality reproduction of their designs by using Lewis Standard-strength Chemicals for printing, dyeing and finishing.*

**IMPERIAL BRAND**  
**JOHN D. LEWIS**  
 Manufacturer and Importer  
**DYE STUFFS & CHEMICALS**  
 Office and Warehouse:  
 Fox Point, Providence, R. I.  
 Works: Mansfield, Mass.  
 40 Central Street  
 BOSTON

Acetine  
 Tannic Acid  
 Tartar Emetic  
 Antimony Lactate  
 Antimony Salts  
 Steam Black  
 Acetate of Chrome  
 Fluoride of Chrome



## COPPER POWDER

150 Mesh

*Copper Oxide Black*  
*Cuprous Oxide Red*

Cable Address  
 Fluorine

Telephone  
 Gramercy 3181

**JOHN C. WIARDA & Co.**  
 INCORPORATED  
 200 FIFTH AVE., NEW YORK, N. Y.



## ANTHRAQUINONE METHYL ANTHRAQUINONE

Sales Offices: 60 Park Place, Newark, N. J.

**E. C. KLIPSTEIN AND SONS CO.**  
 SOUTH CHARLESTON WEST VIRGINIA



Leunasalpeter  
 Sulfate of Ammonia  
 Calurea  
 Nitrophoska  
 Nitrate of Potash  
 Calcium Nitrate  
 Cal-Nitro  
 Urea

Write for Quotations  
 SYNTHETIC NITROGEN  
 PRODUCTS CORP.

285 Madison Ave., New York

**WE OFFER . . .**

*for delivery from spot stocks*

LEAD ACETATE, triple refined white, fine and large crystals  
 LEAD NITRATE, prime white crystals  
 ZINC CARBONATE, precipitated  
 ZINC SULPHIDE, pure

**JUNGMAUN & CO.**

Incorporated

Industrial and Fine Chemicals — Raw Materials  
 Address: 155 Sixth Ave.  
 New York City

Tel. Walker 7153-4

# The Chemical Market-Place

## Situations Wanted

RESEARCH CHEMIST has numerous inventions in various fields and is capable of taking quick prospective of new fields. Has made some noteworthy inventions in the field of synthetic resins and varnishes. Has added advantage in the experience of drafting and prosecuting chemical patent specifications. Desires a responsible position in plant or research laboratory. Box 881 CHEMICAL MARKETS.

INDUSTRIAL ENGINEER with training in Chemical Engineering, Business Administration and Salesmanship from Michigan and Columbia Universities. Now Michigan representative for national organization. Will consider position in industrial plant, sales organization or as junior executive. Age 27. Box 876 CHEMICAL MARKETS.

PRACTICAL LACQUER Man of 11 years experience formulating, wants position. Experienced in making lacquers for the industrial manufacturing trade. Knowledge of pigmenting lacquer enamel and lacquer dyes. Box 874 CHEMICAL MARKETS.

MEXICO—German Chemist, graduated as Dr. Ing., twenty-six years old with splendid recommendations and who does not wish to renew his three years' agreement as superintendent of a chemical factory, which agreement expires now, wishes to enter in relations with American factories, interested in manufacturing and sale of their products in Mexico. Box 868 CHEMICAL MARKETS.

CHEMIST. Ph. D. European graduate, 26 years practise synthetic organics, inorganics: dyes, intermediates, textile specialties; sodium hydro sulphite, zinc sulphoxylate, titanous sulphate; special interesting process sodium bisulphite; hydrogen peroxide (newest method) dry colors: red oxide iron, chromium oxide, titanium dioxide, synthetic tannins, sulphonated oils; special process for sulphur black (250%) disodium, trisodium phosphate; Special Faetice (rubber substitute) synthetic coumarine, other perfumes. Several of these commodities requiring small investment are highly profitable. Wants connection. Box 879 CHEMICAL MARKETS.

CHEMIST, recent graduate, age 23, B. S. (N.Y.U.) M. A. (Columbia U. June, 1929) desires permanent connection with reliable organization affording opportunity with advancement. Available now. Box No. 877 CHEMICAL MARKETS.

Young, efficient Lead Solderer (German) expert in all kinds of work, desires position. Worked for years in foreign countries. Has first class references. Address replies to "788" c/o Rudolf Mosse, Halle/S (Germany).

## WANTS & OFFERS

**Rates—All classifications, \$1.00 an insertion for 20 words or less, additional words 5c each per issue: 10c for forwarding mail if box number address is used.**

**[Payment must accompany order—we cannot bill want ads.]**

**Address: Wants & Offers,  
Chemical Markets,  
25 Spruce St., New York**

## Business Opportunities

Group of sales executives with office in New York City and long experience in chemical field, organic and inorganic, having acquaintance with chemical manufacturers and dealers, dye manufacturers and dealers, pharmaceutical manufacturers and dealers, food manufacturers, dry color manufacturers, laundries, etc., could develop market for first hand products. Interested in either manufactured product or basic product like salt, sulphur, benzol, etc. Box 872 CHEMICAL MARKETS.

Experienced Chemical salesman, very aggressive, will invest up to \$25,000, in chemical manufacturing or merchandising enterprise. Give full details. Strictly confidential. Box 873 CHEMICAL MARKETS.

## Help Wanted

CHEMISTS WANTED—To discover new uses for our products in all industries. We have a number of interesting new products which we believe can be used to advantage in innumerable places. We are willing to pay from \$23-200 for each new use suggested and adopted. Box No. 878 CHEMICAL MARKETS.

WANTED—By manufacturer of industrial chemicals on Pacific Coast, Chemist to take full charge of laboratory. Must be capable of doing analytical and research work. Manufacturing experience desirable, but not necessary, but must have several years practical experience since graduation. Box 875 CHEMICAL MARKETS.

## For Sale or Rent

FOR SALE—3-Story and basement brick 35 x 90, elevator, steam heat, 2-1 story enclosed sheds 75 x 20—50 x 20, large yard. Handy to railroad stations. 15 minutes to New York. Price \$38,000. Very liberal terms. W. A. Grady, 2 Bishop Street, Jersey City.

Factory for sale—about 28,000 square feet of floor space hollow tile construction on 3 1-2 acre plot enclosed with cyclone fence, 28 miles from New York, railroad siding, loading platform, unrestricted, suitable for chemical or allied line. Offered at sacrifice price. Box 880 CHEMICAL MARKETS.

## Surplus Stocks

Wanted to buy dirty organic solvents and cleaners. If you are not saving solvents at present it will pay you to save. Please send samples and state quantities. Master-Craft Prod. Co., 623 Brier Place, Chicago, Ill.

## Raw Materials

MOLYBDENITE CONCENTRATES—90% to 95% MoS<sub>2</sub> for sale in 1,000 pound lots. Price 50c pound contained molybdenite f.o.b. MILLER'S ASSAY OFFICE, Nogales, Arizona.

## Equipment

GOOD USED MACHINERY. For ten years we have been serving the Chemical Industries, furnishing varied items of used equipment from plants dismantled by us. Only good used machinery is offered our customers. The following special items will be of interest.

- 1—Beta-Naptha Still.
- 12—Buffalo 6' x 8' Aniline Reducers.
- 3—500 gallon Welded Steel Autoclaves, 300 lb. working pressure.
- 3—Stokes 300 gallon grainers, jacketed.
- 2—6' Crystallizing Pans.
- 1—Devine Lime Hydrater.

Hundreds of other items always available. Write for Catalogs. Nashville Industrial Corporation, Old Hickory, Tennessee.

## USED MACHINERY

**Thoroughly Overhauled and Rebuilt in our Shops, Newark, N. J.**

**Send Us Your Inquiries For**

Filter Presses, plate and frame type, recessed, Sweetland, Rotary, Oliver; Dryers, Vacuum Shelf, Rotary Vacuum, Atmospheric, Direct Heat, Rotary, etc.; Kettles, cast iron, steel, copper, aluminum, duriron, lead lined, open and closed, all sizes, plain and jacketed, agitated and non-agitated; Sulphonators; Nitrators, Autoclaves; Centrifugal Extractors; Evaporators; W. & P. Mixers; Dough Mixers; Distilling Units; Columns; Vacuum Pans; Sulphur Burners; Grinders; Crushers; Pebble Mills; Pumps; Boilers. *Send for our latest circulars.*

**CONSOLIDATED PRODUCTS CO., INC.**

**18 Park Row**

**Barclay 0600**

**New York City**

*We pay cash for your Idle Machinery — single items or complete plants*

# PFIZER'S CITRIC ACID

POWDERED

GRANULAR

CRYSTALS

SODIUM CITRATE  
POTASSIUM CITRATE

UNIFORM—STRICTLY U.S.P.

EIGHTY YEARS OF  
MANUFACTURING EXPERIENCE  
BEHIND OUR PRODUCTS

**CHAS. PFIZER CO.** INC.

MANUFACTURING CHEMISTS

81 MAIDEN LANE  
NEW YORK, N.Y.

EST. 1849

444 W. GRAND AVE.  
CHICAGO, ILL.

## Index To Advertisers

American Commercial Alcohol Corp., New York City.....	580
American Cyanamid Co., New York City.....	653
American Mineral Spirits Co., Chicago, Ill. ....	630
American Potash & Chemical Corp., New York City.....	659
American Solvents & Chemical Corp., New York City.....	649
Atlantic Tank Corp., North Bergen, N. J.....	609
Austin Company, Cleveland, O.....	612
Baker Chemical Co., J. T., Phillipsburg, N. J.....	564
Barium Reduction Corp., Charleston, W. Va.....	670
Barrett Co., The, New York City.....	578
Bowker Chemical Co., New York City.....	663
Cabot, Godfrey L., Boston, Mass.....	573
Calco Chemical Co., Bound Brook, N. J.....	Cover 1
Carbide & Carbon Chemicals Corp., New York City.....	Cover 3
Carpenter Container Co., Brooklyn, N. Y., Insert facing, page 609	
Chemical Solvents, Inc., New York City.....	661
Chipman Chemical Engineering Co., Bound Brook, N. J.....	661
Church & Dwight Co., New York City.....	640
Cleveland-Cliffs Iron Co., Cleveland, Ohio.....	634
Coignet Chemical Products Co., New York City.....	671
Commercial Solvents Corp., Terre Haute, Ind.....	567
Consolidated Products Co., Inc., New York City.....	669
Cooper, Chas. & Co., New York City.....	663
Diamond Alkali Company, Pittsburgh, Penna.....	569
Dorr Co., New York City.....	610
Dow Chemical Co., Midland, Mich.....	561
DuPont de Nemours Co., E. I. Wilmington, Del.....	565, 645
Eastman Kodak Co., Rochester, N. Y.....	649
Electro Bleaching Gas Co., New York City.....	622
Fergusson, Jr., Alex., Philadelphia, Pa.....	651
Franco-American Chemical Works, Inc., Carlstadt, N. J.....	655
Franks Chemical Products Co., Inc., Brooklyn, N. Y.....	661
General Chemical Co., New York City.....	566
General Dyestuffs Corp., New York City.....	571
Givaudan-Delawanna, Inc., New York City.....	568
Grasselli Chemical Co., Cleveland, O.....	624
Gray & Co., William S., New York City.....	630
Greeff & Co., R. W., New York City.....	665
Hamilton, A. K., New York City.....	655
Harshaw Chemical Co., Cleveland, Ohio.....	576, 577
Hooker Electrochemical Co., New York City.....	574
Innis, Speiden & Co., Inc., New York City.....	Insert facing page 641
Jungmann & Co., New York City.....	668
Kalbfleisch Corp., The, New York City.....	575
Kay Fries Chemicals, Inc., New York City.....	614

Fused 60/62

## Sodium Sulphide Strips



**Barium Reduction Corp.**  
CHARLESTON, W. VA.

## Index To Advertisers

Kessler Chemical Corp., Orange, N. J.....	634
Klipstein & Sons, E. C., New York City.....	668
Kuttruff, Pickhardt & Co., New York City.....	636
Lewis, John D., Providence, R. I.....	668
Mallinckrodt Chemical Works, St. Louis, Mo.....	632
Mann & Co., G., Providence, R. I.....	659
Mathieson Alkali Works, New York City.....	563
Mechling Bros., Chemical Co., Camden, N. J.....	665
Merek & Co., Rahway, N. J.....	643
Michigan Alkali Co., New York City.....	572
Monsanto Chemical Works, St. Louis, Mo.....	
Insert facing, page 608	
Mutual Chemical Co., New York City.....	628
National Aniline & Chemical Co., New York City.....	618
N. Y. Quinine & Chemical Works, Brooklyn, N. Y.....	665
Newport Chemical Works, Passaic, N. J.....	671
Niacet Chemicals Corp., Niagara Falls, N. Y.....	655
Nichols Copper Co., New York City.....	659
Olean Sales Corp., Olean, N. Y.....	640
Pacific Coast Borax Co., New York City.....	663
Parsons & Petit, New York City.....	661
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.....	653
Pennsylvania Sugar Co., Philadelphia, Pa.....	655
Pfizer, Chas. & Co., Inc., New York City.....	670
Roessler & Hasslacher Chemical Co., New York City... Cover 4	
Selden Co., The, New York City.....	616
Shriver & Co., T. Harrison, N. J.....	606
Solvay Sales Corporation, New York City..... Cover 2	
Southern Agricultural Chemical Corp., Atlanta, Ga.....	632
Standard Silicate Co., Cincinnati, O.....	651
Stauffer Chemical Co., New York City.....	647
Synthetic Nitrogen Products Corp., New York City.....	668
Tartar Chemical Works, New York City.....	659
Texas Gulf Sulphur Co., New York City.....	620
Turner & Co., Joseph, New York City.....	657
U. S. Industrial Alcohol Co., New York City.....	626
Victor Chemical Works, Chicago, Ill.....	663
Warner Chemical Co., New York City... Insert facing, page 640	
Western Scientific Supply Co., Denver, Colo.....	665
Wiarda & Co., Inc., John C., New York City.....	668
Winkler & Bro., Isaac, Cincinnati, O.....	657
Wishnick-Tumpeer, Inc., N. Y. City.....	570
Wolf, Jacques & Co., Passaic, N. J.....	636

# GELATINE

Pure Food and Technical

## GELATINE

Gold Label      Silver Label

### COIGNET GELATINES

17 STATE STREET      NEW YORK CITY

# GELATINE

## THE NEWPORT PRODUCTS

include...

**Dyes**  
of all classes

**INTERMEDIATES**  
of superior quality

**SOLVENTS**  
produced by hydrogenation

**DETERGENTS**  
utilizing their valuable  
properties

and a number of Specialties —  
such as FLEXO FILM PAINT



**Newport Chemical Works**  
INCORPORATED  
Passaic, New Jersey

Branch Offices and Warehouses  
Boston, Mass.    Chicago, Ill.    Philadelphia, Pa.  
Providence, R. I.    Greensboro, N. C.    Greenville, S. C.  
Montreal, Can.    Newnan, Ga.

# "WE"—Editorially Speaking

George L. Clark, who describes the increasing use of the X-ray in industry, was born in Anderson, Indiana, September 6, 1892. He received an A. B. from DePauw University in 1914; an M. S. from the University of Chicago in the same year; and the degree of Ph.D. from the University of Chicago in 1918. During the war, he was a lieutenant in the Chemical Warfare Service. Since that time he has been associate professor of physical chemistry, Vanderbilt University, 1919-21; National Research Fellow, physics department, Harvard University, 1922-24; professor of applied chemical research, Massachusetts Institute of Technology, 1924-27; and professor of chemistry, University of Illinois, 1927 to date. He is a member of the American Chemical Society and the American Physical Society; Fellow of the American Association for the advancement of Science; Fellow of the Royal Society of Arts, Great Britain; Member of Deutsche Physikalische Gesellschaft; Member of the American Society for Testing Materials; and Editor of the research department of "Radiology."

E. H. de Coningh, who writes on "Profits in Dust Control," received the degree of A. B. from Princeton University in 1922, studied a few months at the University of Grenoble, France, and then returned to the Massachusetts Institute of Technology, from which he received a degree of B. S. in 1925. Since that time, he has been associated with the American Steel Foundries, Chicago, and then with the Laundrette Manufacturing Co., Cleveland, as assistant to the president and secretary. For the past two years he has been with the Dust Recovering and Conveying Co., Cleveland, first as engineer and now as technical editor. He is a member of Phi Beta Kappa, Tau Beta Pi, Chi Phi, Princeton Elm Club, University Club of Cleveland, and the Cleveland Engineering Society.

Rudolph Zinsser, who discusses price cutting, was graduated from Princeton University in 1910, after which he took his master's degree in chemistry at Columbia University. During his entire business career he has been associated with the firm of William Zinsser & Co., New York, as secretary and treasurer. For the past three years he has been president of the American Bleached Shellac Manufacturers' Association.

The Assistant Secretary of Commerce, who discusses "Men and Mergers" in this issue, is a familiar figure to all our readers. He was born in San Jose, California, June 27, 1886 and received his education at the University of California and at Harvard University, receiving the degree of B. Litt., from the former in 1907, and those of A. M. and Ph. D., from the latter in 1913 and 1915 respectively. He also studied at the University of Berlin in 1913 and at the Sorbonne, Paris, in 1914. He was an instructor in Latin American history and economics and later assistant professor at Harvard University from 1915 to 1923. In 1917 he was appointed chief of the Latin-American division, United States Department of Commerce, and during 1919-20 was stationed at Buenos Aires as commercial attache. He returned to this country in 1921 to assume the post of director of the United States Bureau of Foreign and Domestic Commerce, which position he held until his appointment by President Hoover as Assistant Secretary of Commerce. He was American delegate to the General International Economic Conference in 1927 and is a member of American Economic Association; American Historical Association; Hispanic Society of America; Sociedad Chilena de Historia y Geografia; Phi Beta Kappa; and the Cosmos Club.

John Lord O'Brian was born in Buffalo, New York, October 14, 1874. He completed his academic education at Harvard University, followed by his law degree at the University of Buffalo. He served in the New York Legislature three terms, 1906 to 1909. Upon his resignation President Roosevelt appointed him United States Attorney for the Western District of New York, in which capacity he served six years. In 1913 he was one of the fifteen delegates at large to the New York Constitutional Convention. In 1917 he became head of the War Emergency Division of the Department of Justice and in 1925 was a member of the Hughes Reorganization Commission of New York, serving as its Vice Chairman. At President Hoover's request he went to Washington last June as the Assistant to the Attorney General to assume control of the Anti-trust Division of the Department of Justice. In such capacity he supervises the activities of a score of lawyers in the administration of the Sherman Anti-trust Law, the Clayton Act, the anti-trust provisions of the Wilson Tariff Act and the other Federal Anti-trust Acts passed from time to time since the Sherman Law was enacted. He is a director of the Equitable Life Assurance Society. He served continuously for twenty-six years as a trustee of the University of Buffalo, and fourteen years of that period was an instructor and a member of its law faculty. He has served for many years as a director of the Albright Art Gallery, Buffalo. During the last ten years he has been Vice President of the Charity Organization Society and a director of Joint Charities and Community Fund. Hobart College in 1916 granted him a Doctor of Laws, for "services in good citizenship." The New York State Legislature in February, 1930, unanimously elected him one of the twelve Regents of the University of the State of New York.

A reminder may be in order to those of our readers who have not as yet returned their ballots nominating their candidates for the gold medal to be awarded by CHEMICAL MARKETS in public recognition of outstanding industrial leadership in chemical fields. As announced on the ballot, nominations will close June 15, so that there is just time to name your candidates and mail the ballot.

## COMING FEATURES

### SILICATE OF SODA

James G. Vail, chemical director, Philadelphia Quartz Co., writes on the new developments in the uses of sodium silicate in industry.

### FILTRATION

Arthur Wright, president, Filtration Engineers, Inc., tells how to improve chemical products and lower production costs through proper filtration.

### PETROLEUM GOES CHEMICAL

Frank A. Howard, vice-president, Standard Oil Development Corp., discusses the influence of chemical technology on the oil industry.

